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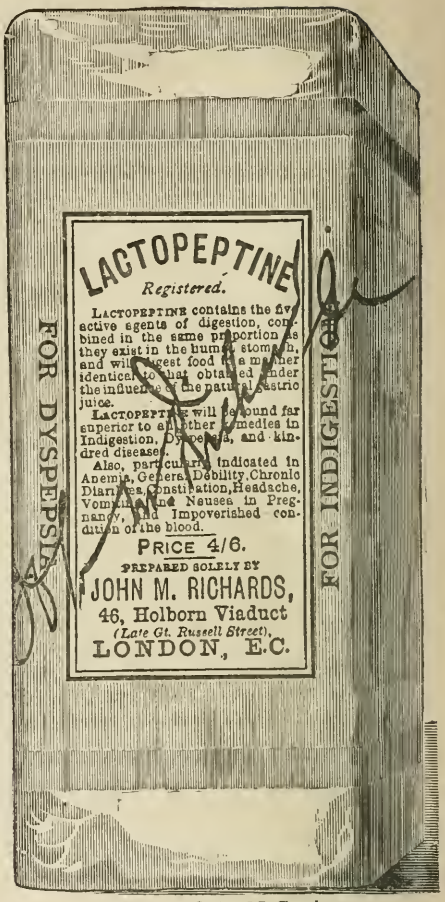
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4. Bulletin of the Johns Hopkins Hospital. Vol. V., No. 43, 44, 45. Baltimore. November and December, 1894.

5. A Short Sketch of the New York Medical College. By Edwin Hamilton Davis, A.M., M.D. New York. 1883. Pp. 23.

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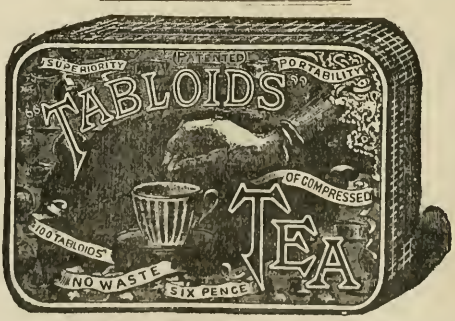

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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

FEBRUARY 1, 1895.

PART I.

ORIGINAL COMMUNICATIONS.

ART. V.—*Some Thoughts on the Method of Relieving an Obstructed Bowel.*[a] By W. THORNLEY STOKER, President, R.C.S.I.; Surgeon to the Richmond Hospital.

IT is the privilege of the President of this Section to address the members at its opening meeting on some matter of surgical interest, and it is an occasion when one may fairly be excused if he elects a topic to which he can apply his experience, rather than one of the novel and obscure subjects in which the theorist delights to revel, and which capture the intellect rather than deal with every-day incidents of our surgical life.

I do not intend to go far afield for material, because it seems to me that the importance of facts is to be measured by their commonness, and that just as the dignity of labour overshadows the greatness of kings, so the most frequent incidents of our surgical life throw the curiosities and rarities of our science into the shade. Common surgery means universal surgery, and implies that which may be cultivated to the greatest good of the greatest number. What Tennyson has called "the falsehood of extremes" is one that creeps very insidiously into the daily life of the enterprising surgeon. There is a tendency to argue from extreme or rare and individual cases, and to lose sight of broad and collective issues. How often we see elaborate and able papers written with

[a] The Presidential Address delivered at the opening of the Surgical Section of the Royal Academy of Medicine in Ireland, Session 1894–95.

a view to deduce a theory or a practice from a particular and eccentric instance, and the paucity of material concealed by an overshadowing cloud of science condensed from the literature of half a dozen modern languages. This "paper-making" or encyclopædic style is destructive to a fine cultivation of our science, but is a less evil than that which it conceals—the undue craving after originality. Every second surgeon wants his name connected with an operation or an instrument, and in this age of hot and unwholesome competition the hunger is disastrous to the quiet and perfect digestion of abundant material which waits on normal appetite.

As far as my sight reaches I can see no direction in which the craving for novelty and originality has caused men to overstep themselves more than in the operations undertaken so often and with such a light heart for the relief of some forms of obstruction of the bowel. The hateful expression that "there is practically no danger in opening the peritoneum" is ever before the reader in these days, and, as regards a class of cases I wish to speak of, a more false or poisonous teaching was never promulgated.

It is more than five years since I read before this Section of the Academy a paper "On the Treatment of Acute Intestinal Obstruction due to Collections within the Lumen of the Bowel," and I am here now to repeat with every force I can, and with what added weight time, experience, and the position I now hold may give to my words, the doctrines I then enunciated.

Do not let anyone misunderstand me—although I hold that we live in a time when there is too free a resort to operation in general, and although we may look for a subsidence of the wave and a return to a normal level—yet I have no cry to raise against the general advance of the operative treatment of the bowel—that would be foolish as well as futile. I have no word to say now against laparotomy in any class of cases save one, and even in that class I make no wholesale condemnation, but only urge that it shall be adopted after grave consideration and in selected instances. My remarks do not apply to obstruction due to neoplasms growing in the substance of the bowel, or to pressure on it by peritoneal or intra-peritoneal material; but to those very common cases in which, owing either to an atonic intestine failing in its peristalsis, or a normally strong one becoming overloaded by its contents, the balance between the propulsive power of the bowel and the load it has to move

is destroyed. The result is the decreasing power of the gut, its extreme distension, and the production of the condition named *ileus paralyticus*. We seldom see these cases until they have arrived at an advanced stage, until great abdominal distension has taken place, and until the issue is very evidently one of much gravity.

I have seen a great number of such cases in my own practice and in that of others, and I wish to reiterate the opinion I have already expressed that laparotomy is in them an extremely fatal operation, and should be undertaken only when other legitimate means have been exhausted, or where they are evidently improper owing to the advanced stage or general condition of the case. To formulate rules as to when or in what conditions such an operation might be undertaken is not possible except to the book-surgeon. The man who has practical experience knows that abdominal surgery cannot be reduced to a formula, and it is long experience and the tact which may be cultivated, but cannot be conferred, that teach us when we must and may open the abdomen in *ileus paralyticus*. To be sure, even the most skilled may fall into the error of delay, and there is no case so surrounded by doubtful problems as that of which I am speaking.

As regards antecedent treatment I have not much to add to, and nothing to subtract from, what I have already urged in the paper I have quoted.

Of the ordinary local measures, such as the application of heat and rubefacients, I have a growing dread. I have never seen them doing substantial service, and I have repeatedly witnessed their production of such superficial redness and inflammation as served to obscure diagnosis and increase the dangers of operation. If poultices or massage be employed they should be used in such a degree as to soothe or stimulate, but not to produce irritation.

Of the value of belladonna, if used freely and early in the case, I still hold a favourable opinion, and I am convinced that its best therapeutic effect is obtained by administering it if possible uncombined with opium. I have nothing to take from, or add to, the ideas I have already expressed about this drug. Its action is understood, and its administration logical. It relieves pain, while it does its work. It finds its chief use in those cases of peristaltic paralysis due to tympanites or fæcal

accumulation, and as these are most often seen in obese persons, and are attended by great meteorism—both conditions which render operation extremely dangerous—this drug is often an alternative with the knife. It should be given in full and repeated doses, and pressed until it shows its constitutional effect by producing either dilated pupil or dryness of the throat. The latter symptom is that most usually seen. It is perfectly useless employing this drug unless it be administered to its full extent. It may generally be combined with calomel. It is remarkable that whereas the tolerance of belladonna when given in chronic obstruction is very variable and its employment requires caution, it is extremely well borne in acute cases. The weak and impeded heart which is present in so many examples of acute obstruction is materially aided by the use of belladonna, which is a most excellent cardiac stimulant.

Of opium itself I still have a respectful terror; it masks symptoms so much that it is capable of being a very destructive agent. Nothing but severe pain indicates its use, and in view of the vomiting which is generally present, it is best employed in the form of morphine, and best administered by the hypodermic method.

Of the early employment of purgatives I am even less afraid than formerly, but I have somewhat modified my opinion as to the best drug to use. While I have not relinquished calomel, I rarely employ it except in combination with belladonna. I have a growing fondness for salines. I generally use the sulphate of sodium, and give it in hourly doses of one or two drachms until an ounce or more has been administered. The worst that can result from the use of a cathartic that fails to purge is disturbance of the stomach, and this unhappily is such a usual incident of these cases that it is of less moment than it otherwise would be. The difficulty of giving a purgative is often very great on account of the vomiting which exists, and in such cases their administration by the rectum is occasionally successful. Before using a purgative in this way the rectum should always be washed out with warm water. The greatest therapeutic *desideratum* of our day is a method of catharsis by hypodermic medication; and whoever can discover a purgative capable of this mode of introduction will have done as much for humanity as Jenner or Simpson. Nothing is more perplexing than the problem of how to purge a patient whose stomach rejects everything that is introduced into it.

Of all the points in the treatment of an overloaded or paralysed bowel there is none on which my convictions remain stronger, or in which, pleasant to relate, I have seen more improvement in method than in the use of the long enema tube. I have spoken in no uncertain fashion of the uselessness and danger of that instrument called "O'Beirne's tube," all the more awful because it was—and, I fear, still is—the custom to teach that it is safe, and its employment so free from danger that even unskilled persons may use it. Mr. Treves was, perhaps, the first writer to cast discredit on this hoary impostor. It is not enough to recognise its danger unless we also admit its comparative uselessness. Life may be destroyed by it. It is rigid enough to perforate the bowel; and I know cases in which this result has, by a little untrained energy, been achieved. I will undertake to perforate the coats of any average rectum with an ordinary gum elastic long tube, such as is usually supplied by instrument makers; and what can be done may be done, if either enough will or sufficient ignorance be present. So much for its danger; what of its uselessness? I contend that no mechanical effect can be gained by the introduction of fluid into the bowel which is not possible with an instrument 9 or 10 inches long, assisted by the natural penetrating quality of water, by gravitation produced by the posture of the patient, and such gentle pressure as that afforded by the use of a tube to which I shall presently refer. The absurdity of supposing that a pipe can be passed through the sigmoid flexure must be evident to those acquainted with the anatomy of that bowel; and the obvious explanation of the instances where, on external examination, it seems to have been done, can be a difficulty only to the tyro in the dissecting-room or dead-house. The length of mesentery possessed by the sigmoid bowel will often permit it to be pushed into the upper zone of the abdomen by the intrusive instrument. Nor must we overlook the danger of the force with which an injection can be introduced by the powerful pump usually employed with the long tube. I have seen a bowel which had been ruptured with fatal effect by this agency alone. As regards the use of medicaments other than water, and supposed to be solvent—such as oil or ox-gall—I disbelieve in their efficacy. They have no effect except whatever moral one they may exercise on the patient or his friends. All that can be done, can be best done by warm water alone.

For some years past I have used but two instruments for giving enemas. One is an ordinary Higginson's syringe, to the nozzle of

which a No. 12 or 14 red rubber catheter has been attached. For the daily purposes of the rectal toilet, or in cases where the injection is to be retained, or ejected by natural effort, this will be found perfect. It is absolutely safe, and quite painless. It can be used in the most tender infant or the most callous adult; and in instances where injection is called for in the presence of inflamed piles, it is a blessing without any disguise.

The second instrument is an ordinary red rubber tube $\frac{4}{8}$ to $\frac{5}{8}$ of an inch in diameter, such as is used for washing out the stomach. It is convenient to have circles marked at 3, 6, and 9 inches from its extremity, so as to know what length of it lies in the rectum. A large funnel should fit the dilated extremity and should be transparent, so as to allow the fluid, which is being introduced, to be seen. I have found a celluloid funnel more convenient and portable than one made of glass.

The patient lies on his back or left side with the pelvis raised, so as to facilitate the passage of fluid into the sigmoid and descending colon. The only fluid that should be used is warm water, and 8 or 10 gallons of it may be employed at one sitting. The surgeon sits on the right of the patient's bed, introduces the end of the tube, and retains it in position with his left hand, while with his right he holds the other end of the tube, into which the funnel is inserted. The tube is introduced 3, 6, or 9 inches, as may be indicated, and should be occasionally moved up and down in the anus by the left hand. An assistant pours water into the funnel, and the pressure may be varied and adjusted by the height to which it is raised by the operator. The left hand can be used at any moment, when the pressure in the rectum becomes painful, to pinch the tube, and stop the flow. When as much water has been introduced as can be borne, the funnel is removed, that end of the tube lowered to a basin placed on the floor, and the fluid allowed to run out of the bowel. By repeated operations of this kind large quantities of water may be used, and the bowel emptied without the patient being exhausted by straining or by the necessity of changing his position. The solution of fæces and expulsion of flatus are assisted by the pushing in and out of the tube which I have indicated, and by the varying hydrostatic pressure, caused by alternately raising and lowering the funnel at the free end of the tube.

The advantages of this method over older ones are as follows:—

1. The tube is soft and cannot cause injury.

2. The fluid pressure can be regulated to a nicety, and cannot be made excessive; as if undue pressure threatens, regurgitation into the funnel takes place.
3. Enormous quantities of water can be used.
4. The currents created by alternating hydrostatic pressure have a powerful solvent effect on the fæces.
5. The operation necessitates no exertion on the part of the patient, no change of position, and can be carried on for a long time without causing exhaustion.

I trust I may be excused for entering into a detail of this kind in the presence of so many accomplished surgeons; but there are many young ears present into which my words may pass. I cannot but regard this apparently simple procedure as one of the greatest improvements which has been introduced into the treatment of bowel obstructions. I have avoided many laparotomies by employing it, and I believe have seen a number of lives saved. Like all other surgical practices, it gains value by experience; but I am convinced that those who patiently employ it will esteem it as highly as I do; and I earnestly urge on my younger colleagues the abandonment of the old rigid tube and the adoption of the simple rectal armament included in the two instruments I have spoken of.

It is not alone in cases of fæcal obstruction that this method finds its use. In every instance where it is sought to unload the bowel it will be found of service. It may be used with excellent effect in the paralysis of peritonitis, and will, in that difficult case, produce evacuation where other means have failed. As a method of unloading the intestine in chronic obstruction, preparatory to operation, its value also expresses itself.

There is no organ of the body which requires more tender treatment than the bowel, and none which is so often left to be dealt with by the unskilled or uneducated. Many surgeons delegate the use of the enema to an assistant, as if this potent engine were unworthy of their own attention, and many who use it employ undue force. "No force" should be the postulate of our work with the intestine. We cannot be too persuasive, and it is because so much bad practice with regard to the use of the enema is followed, that I have ventured on such an occasion as this to urge my views against the use of a rigid tube, and to plead for one which has both complete safety and infinite advantage in point of merit. I offer you no weary list of cases, because, after all, they

are useful only to substantiate opinion, and if you cannot accept a man's deliberate opinion you are not likely to put faith in his cases. Cases can be twisted to prove anything. In such a position as that which, by the kindness of the Fellows of this College, I occupy, a little dogmatism may be excused, and I feel so strongly about this matter of the tube that I have ventured to deal with it in preference to some more brilliant or alluring topic. I beg you to believe that if I speak forcibly it is because I feel conviction, and when I argue for the total abandonment of the older form of tube I desire to assure you that any words I use are spoken with a full recollection of the gravity which my office attaches to them.

Of course the great difficulty to be overcome in acute obstruction is that of diagnosis, and even to the most experienced no finality is possible. There is no branch of surgery in which extended clinical observation and careful reasoning work better together. A simple process of logic will help the most trained clinician to a true conclusion. No cases afford more opportunity for the display of high surgical qualities than those of which I have spoken. Given the proper faculties of observation and deduction, the two qualities which combine to produce great surgical fitness are Thoroughness and Resource, and in the management of obstruction of the bowel there is the most ample opportunity for their development.

ART. VI.—*The Surgery of Hypertrophied Prostate.*[a] By THOMAS EAGLESON GORDON, M.B., B.Ch., Univ. Dubl.; Assistant Surgeon to the Adelaide Hospital; Demonstrator in the School of Anatomy, Trinity College, Dublin.

THE subject I have chosen for my Address is the Surgery of Hypertrophied Prostate. It will, however, be convenient, in the first instance, to briefly review what is known of the development, anatomy, and function of the normal gland—as far at least as these are of surgical interest or importance.

If the abdomen of an early embryo is opened there will be seen, on either side of the middle line, in the lumbar region, two long vascular prominences. These are the Wolffian bodies—structures

[a] The Presidential Address to the University Biological Association, delivered Thursday, November 29, 1894.

composed of glomeruli and tubes similar to those found in the permanent kidney.

Leading from the Wolffian bodies there will be seen the Wolffian ducts, and these pass downwards to open into the urogenital sinus.

This sinus is merely the lower portion of the spindle of the allantois; the upper part of the spindle, it will be remembered, forms the urinary bladder.

Lying internal to the Wolffian body is another structure, the genital organ; and coursing downwards, alongside the Wolffian duct, is the duct of Müller, which opens like it into the urogenital sinus. The lower part of the duct becomes fused with its fellow to form a single tube. The upper end is open into the peritoneal cavity.

These structures—Wolffian body and duct, genital organ, and duct of Müller—are the rudiments of nearly all the future genital system of both sexes. In the male, the testis is developed from the genital organ; from the Wolffian body and its duct are derived the vasa efferentia tube of the epididymis and vas deferens.

The urogenital sinus becomes the first portion of the urethra. The ducts of Müller undergo atrophy almost to annihilation. But their upper part persists as the hydatid of the epididymis, and the extreme lower united parts are represented in the uterus masculinus or prostatic vesicle. Very different is the fate of the duct of Müller in the female. Here the upper part remains as the Fallopian tube, and the remainder, the united part, forms the uterus and vagina.

It will thus be seen that the uterus masculinus must be the homologue of the uterus and vagina, or of some parts of them. It seems to be the opinion of the best modern embryologists that it is most probably the homologue of the vagina alone.

The development of the prostate itself has been lately specially worked out by Griffiths of Cambridge. The conclusions he arrives at are these—The tubules are derived from the prostatic sinuses on either side of the verumontanum—*i.e.*, from that portion of the urethra which, as we have seen, is formed from the urogenital sinus.

As the tubes extend backwards they carry with them a prolongation of the external circular fibres of this part of the urethra, and this muscular tissue is seen in the fœtus spread out in slender fasciculi investing the developing tubes.

As the gland grows, it extends outwards and forwards, but the glandular part, as a rule, does not fuse in the middle line, the continuity of structure being effected by muscular tissue only.

The prostate, it will then be seen, has no developmental connection with the ducts of Müller. The uterus masculinus is no part of the prostate, but merely becomes imbedded in it in its lateral and forward growth. The prostate is not the homologue of the uterus, and we have seen that even the uterus masculinus is probably the homologue, not of the uterus but of the vagina only.

I need occupy only a very few minutes in describing the adult gland, particularly as I have some lantern slides to show, which, with Professor Cunningham's kind permission, I have been enabled to obtain from his frozen sections of the pelvis.

The prostate is composed of gland and unstriped muscle, the latter forming nearly three-fourths of the whole. The glandular part is made up of branching tubes, ending in tubular alveoli lined with columnar epithelial cells.

The average weight of the normal gland is about six drachms. It measures in its long axis, which is nearly vertical, about one and a-quarter inches, and it is about one and a-half inches in width. In form the prostate is roughly conical, and is usually described as having three lobes. The existence of the middle lobe has been questioned, but Griffiths has shown that it certainly does exist in a considerable number of cases. The base of the prostate rests against the bladder, about the internal urethral orifice. The term neck, as applied to this region of the bladder, is objectionable, as no constriction occurs about the urethral opening such as this term would seem to imply. The urethra traverses the gland at about its centre, and I would remind you that this portion of the urethra is almost vertical in direction. In front the prostate is separated from the lower part of the symphysis by a distance of about three-quarters of an inch, and behind is in close relation with the second part of the rectum. It is placed at a much higher level in the pelvis than is, I think, usually appreciated, its base being opposite some point on the upper half of the symphysis.

The gland is firmly fixed in position by the fascial connections of its capsule, so that it only sinks to a slight extent when the bladder is distended. If it is desirable to overcome the slight fall, for operative purposes, it can be prevented by a moderate distension of the rectum. The presence of this fixed support about the orifice of the urethra will easily explain the occurrence of a post-

prostatic pouch when there is any cause of obstruction to the urinary outflow. In prostatic cases it will, of course, attain its greatest degree, because the sinking of the bladder behind the urethral orifice will be accompanied by a raising of the orifice itself, depending on the upward direction of the enlargement.

Within the capsule is the prostatic venous plexus. These veins become dilated and varicose in old age, and their valves disappear. Immediately beneath the mucous membrane of the urethra there is another smaller plexus which undergoes similar changes. These veins communicate freely with hæmorrhoidal and other veins in the neighbourhood, and this fact, taken in conjunction with the absence of valves, explains the frequent congestions of the prostate—congestion which is sometimes sufficient to cause complete retention. The varicose submucous plexus is of interest as explaining the occasional occurrence of severe hæmorrhage after the passage of instruments in these cases. Although surrounded in this way by venous plexuses, the blood-supply of the prostate itself is remarkably small, and, unless the venous plexuses are encroached on, large portions may be removed without causing severe hæmorrhage.

The most important point to be determined in connection with the function of the prostate is whether it is or is not essentially a sexual organ. The solution of this problem has been arrived at by observations of prostatic changes in certain of the lower animals, which have distinct periods of sexual rest and sexual activity.

These observations were first made by John Hunter many years ago. He writes as follows:—"In the mole the prostate gland in winter is hardly discernible, but in the spring becomes very large and filled with mucus." This fact was confirmed by Sir R. Owen, and during the last few years by Griffiths. Griffiths' observations are of particular interest, since they include microscopic examinations. I need not delay to describe them in detail. Suffice it to say, that they fully confirm John Hunter's early observations—that they show that the prostate undergoes an enormous increase in size during the breeding season, and that this increase is accompanied by important changes in the shape and number of the epithelial cells lining the gland tubes, and by equally marked changes in the muscular stroma. These interesting facts, I think, conclusively show that the functional activity of the prostate in these animals is closely dependent on the functional activity of the testes, and

this relationship would seem to justify us in regarding the prostate as an accessory sexual gland.

This conclusion has received confirmation from the effects on the prostate which have been observed to follow castration in many animals. In Hunter's works the following statements occur:—"The prostate and Cowper's glands, and those of the urethra in the perfect male, are soft and bulky, and the secretion salt to the taste. In the castrated animal these are small, flabby, tough, and ligamentous, and have little secretion. Especially marked is this change when the animal is castrated when young." These observations have received striking confirmation by Griffiths and White, and it has now been absolutely proved that the prostate will undergo atrophy whether the animals are castrated when young or when they have attained to adult age. The experiments conducted for White are particularly interesting.

The average weight of the prostate was first determined by experiments on 35 dogs. Taking the average weight in dogs weighing 14 to 16 kilos. as 15 grammes—in one case, 17 days after castration, the prostate was found to weigh only about $5\frac{1}{2}$ grammes instead of 15. In another dog, in which the average weight of prostate relative to its weight was 19 grammes, it weighed only $2\frac{1}{2}$ grammes about a month after castration. There were, in all, twenty-four experiments performed, and in every case the results were equally remarkable. Microscopic examinations were made in each, and showed atrophy of both glandular and muscular elements.

The prostate is then undoubtedly a sexual organ, and recent experiments tend to show that it is not only accessory but essential to fertilisation. This fact has been proved by experimental removal of the prostate. In the animals so treated the power of copulation remained, but they were incapable of reproduction of their species. Such being the case in the lower animals, one might, with tolerable safety, conclude that the prostate has a like function in man, and that castration would lead to either non-development or atrophy. The direct evidence is, unfortunately, very unsatisfactory, and is almost confined to the case of a few eunuchs. We must, then, speak with caution, but as far as these imperfect observations go they confirm the results which we would in the first instance have anticipated.

I think it would be very unsafe to dogmatise concerning the exact part which the prostatic secretion takes in fertilisation.

Fürbringer is of opinion that its function is to awaken the latent vitality of the spermatozoa. He found by actual experiment that the addition of prostatic fluid to testicular secretion caused movements in spermatozoa previously quiescent.

It remains to consider the relation of the prostate to micturition. This long-vexed question concerning the sphincter of the bladder can scarcely be said to be definitely set at rest The true voluntary sphincter of the bladder is probably situated near the apex of the prostate, and consists of a circular band of transversely striated muscle, named after its discoverer—the external sphincter of Henle. The portion of urethra above this may, perhaps, almost be looked upon as part of the bladder, but unless there is considerable urinary tension it is kept closed by the elastic pressure of the prostate which surrounds it.

Leaving this necessarily somewhat lengthy introductory matter, I will proceed to the discussion of the more purely surgical part of the subject.

The enlargement which I have now to speak of is almost certainly a true glandular hypertrophy. The fibrous form may be regarded as merely a later atrophic stage. Of the cause of this enlargement absolutely nothing is known. We cannot even state with certainty its time relation to the cessation of sexual function, for, although the testes may become inactive at fifty, it is undoubtedly true that they may continue active till seventy or later. A discussion of the numerous theories would be mere waste of time, but I cannot resist a short reference to one, that of Mr. Reginald Harrison. He endeavours to prove that the enlargement is a compensatory change formed to oppose a sinking of the bladder behind the prostate which, he says, tends to occur in old age.

To support such an extraordinary, so improbable, a theory, one would expect to find very convincing proofs that this sinking of the bladder does occur—such proofs are not forthcoming. Further, the enlargement is not fibrous, nor even muscular, but, as I have said, almost certainly glandular; and even Mr. Harrison will hardly think it possible that a gland should increase in size in order to support some superimposed structure.

Again, in certain of the lower animals—*e.g.*, dogs—this enlargement occurs, and in them the axis of urinary pressure is entirely different. The only difficulty which Mr. Harrison himself recognises is the occurrence of those masses which sometimes grow up into the bladder. This he explains by the following amazing

statement:—"I would speak of these as the upheavals of a frequently contracting muscular ring." My respect for Mr. Harrison as a distinguished surgeon will prevent me expressing what I think of this volcanic utterance. It is surely a *reductio ad absurdum*, and I would have made no reference to the theory were it not an excellent example of the dangers attending speculation on so obscure a subject.

Before discussing the operations proposed for the relief of prostatic hypertrophy, it is scarcely necessary to make the statement that a very large majority of all such cases require no treatment other than properly conducted catheterism, and such a regulation of the general mode of life of the patient as may be best suited to his condition. Setting aside these cases there remains a minority in whom these simple methods are no longer sufficient. I will briefly consider what indications we have that such a stage has been arrived at. First in importance is frequency of micturition. The principal causes of such frequency are an increasing proportion of residual urine, cystitis from whatever cause, and, thirdly, contracted bladder. This latter condition, though apparently uncommon, is one of great importance, since it may be regarded as a certain indication for operative interference. A patient in this condition, as Sir H. Thompson puts it, lives for little else than to pass his catheter, and has arrived at a stage that is the almost certain prelude of approaching death.

In addition to extreme frequency and conditions, such as cystitis, specially associated with it, I wish to remind you of certain other indications of the approaching end to catheter life. One is increasing difficulty in the passage of instruments due to the particular nature of the growth. Another is repeated hæmorrhages. A third the presence of a calculus.

The occurrence of these signs may be regarded as the advent of a further stage in the life of the patient with prostatic hypertrophy. The further course, if untreated, is one of continuous decline. It is marked by signs of general deterioration—such as progressive emaciation, loss of appetite, and thirst with dry and coated tongue; and at times by graver symptoms, as a remitting fever or recurring rigors. These, when combined with signs of local deterioration—increasing frequency, increasing proportion of residual urine, and, at times, it may be absolute retention—complete a picture only too familiar and point with certainty to the coming on of death.

That this sequence of events may be expected when the signs we have mentioned become manifest, has long been recognised by surgeons; and it will be convenient to briefly consider, first, what have been considered the limits of surgery in these cases up to recent times, as this will enable us to better estimate the degree of progress that has since been made.

It is only during the last few years that, for this further stage, any operation has been undertaken of a radical nature. It is indeed true that every now and then operators, who either held a great reputation or wished to obtain such, proposed and practised cutting operations on the prostate, but none of these received universal sanction and they do not even receive mention in standard text books of surgery. The palliative measure most deserving of attention is perineal drainage. This operation was brought prominently before the profession by Sir H. Thompson some ten years ago, and, needless to say, is based on sound surgical principles. By getting rid of the necessity for frequent catheterism, it furnishes rest for the patient, and by affording excellent drainage in *most* cases it gives rest to the bladder and urethra and does much for the relief or cure of cystitis.

But while fully recognising the excellent results obtained in many cases, we cannot overlook certain limitations to its usefulness.

1. It is unlikely to afford sufficient drainage if there is much post-prostatic pouching of the bladder.

2. If the prostatic urethra is much lengthened it cannot allow of digital exploration of the bladder—a calculus might in these cases easily be overlooked.

3. If catheterism has been difficult on account of the form which the enlargement has taken, this difficulty cannot but again present itself when the perineal wound has closed.

That there are such limitations is, of course, fully recognised by Thompson, and he has recommended another operation as a substitute for it or as a sequel to it. This operation is suprapubic cystotomy for exploration purposes, and the subsequent maintenance of a permanent opening, in which is fixed a shielded silver catheter. Sir H. Thompson gives some details of a case thus operated on as a proof of its success.

This was "an advanced case of constant and painful catheterism." A suprapubic exploration was carried out in 1886, "and dense fibrinous deposit and much adhering phosphatic grit were successfully removed," and the patient was able to walk abroad in about

a month. Now mark his condition: he was able to walk three or four miles a day, was free from pain, and his general health was on the whole good, but he had constantly to wear his silver cannula, and supplemented his own faulty anatomy with the ordinary urinal worn by persons requiring such a convenience. Instead of the simple method of relief which normally precedes sleep, this unfortunate man had to wash out a large part of his urinary tract. First, he removed and washed his cannula, then, I suppose, he cleaned out his rubber bag, and, lastly, the relics of his bladder.

Now I have no doubt this man's condition was much improved, but, I think, he surely had no elysium here on earth, and would welcome the time when he would be called upon to shuffle off this mortal coil and his artificial bladder for ever.

I have endeavoured to state, as clearly and briefly as I could, the most which a surgeon can expect to do for these advanced prostatics if he keeps to the beaten tracks of what I will call orthodox surgery; and I will now lay before you the newer operations performed and the results achieved by men, some of whom I am pleased to look upon as pioneers of nineteenth century surgery.

First amongst such operations I will place suprapubic prostatectomy. For the introduction of this operation surgery is certainly indebted to M'Gill, of Leeds; for, although isolated instances of its performance occurred from time to time, it never received any serious consideration until its claims were urged by M'Gill in his Leeds Address before the Medical Association in 1889.

It would be beside my purpose to here discuss the technique of the operation. Suffice it to say, that an opening is made above the pubes. The interior of the bladder is carefully examined and the growth removed. The object in all cases is, first, to remove any protruding intra-vesical growth, and, secondly, to provide a low-level urethra which will be capable of draining a post-prostatic pouch. The first portion of the urethra should be digitally examined, and if it is necessary to extend the operation to this region it is considered well to add to the supra-pubic opening another in the perineum to drain this portion of the urethra.

This account, though brief and imperfect, will, I think, sufficiently show that this supra-pubic prostatectomy is an operation of the greatest possible gravity. It matters little what published statistics show; common sense, which is often a better guide than statistics, will clearly show to any man possessed of it, that this is

an operation attended with the greatest possible risks to life, especially in the case of such patients as these. Granting this, it is evident that to justify its performance its advocates must show us results better than can be obtained by other safer means. Particularly they must show—

1. That the obstruction will not recur in even a large minority of cases.

2. That the function of micturition will be restored in a fair proportion of cases.

3. Or, failing this, that the patient will be once more able to resume his catheter life with far greater comfort and success than previously.

As regards recurrence, it is satisfactory to find only one instance of it in ninety-four cases recorded by Maunsell Moullin; and any opportunities which have arisen of subsequent examination have confirmed clinical results.

Concerning the restoration of micturition by this or other forms of prostatectomy, Sir H. Thompson makes the following statement in his Clinical Lectures in 1888, not since, as far as I know, contradicted:—"I have long wished to see this sight, and have travelled considerable distances abroad and elsewhere expressly seeking it, but at present without success."

Now, it requires most convincing, overwhelming evidence to overthrow this opinion stated by the greatest living master of urinary surgery. I believe such evidence is forthcoming. I cannot discuss the matter at length, but I would instance particularly several of M'Gill's cases published since Thompson's lecture, a case recorded by Buxton Browne, and, again, at all events, one of Mayo Robson's twelve cases.

But, apart from this very severe test, the restoration of the function of micturition, this operation of supra-pubic prostatectomy has shown such excellent results as to justify its holding a definite place in surgery. I think we should, however, insist that as an operation it must be confined to a very limited class of cases—to men who are no longer able to live with the aid of catheterism alone, but who still possess sufficient strength to undergo a major operation, an operation likely to be attended with severe shock, and, it may be, considerable loss of blood. For the remainder—the far advanced cases—there is, I believe, at present one chance, and one only, and that a perineal section.

I have not thought it necessary to consider other procedures

which are, for the most part, only modifications of perineal section; but quite recently an entirely novel operation has been proposed which I must now refer to. The operation cannot at present be said to hold any definite position in surgery; but the very fact of its being on its trial will, I hope, give it the greater degree of interest. This operation is double castration.

I will lay before you the arguments which have been held by some to justify its experimental performance:—

1. The prostate is a sexual gland, the homologue of the uterus.

2. The uterus undergoes atrophy at the menopause, whether occurring naturally or induced by öophorectomy.

The conclusion drawn is, that the prostate would undergo atrophy if the testes were removed.

This argument is somewhat weakened by the fact that the prostate is not, as we have seen, the homologue of the uterus; but, nevertheless, we are justified in thinking that the prostate, a sexual gland, will atrophy with the whole generative system on removal of the master organs, the testicles, just as the whole female generative system atrophies when the ovaries cease to functionate.

To obtain additional light, experiments have been carried out on the lower animals, and these, you will remember, conclusively prove that the normal prostate atrophies after castration in them. This would lead us to expect a similar change in man. But, as I have said, the evidence is not very convincing, and applies almost entirely to eunuchs; and it is manifestly a very different matter that growth should be arrested than that a fully-developed gland should atrophy. However, quite apart from this evidence, it seems to me exceedingly likely that the normal prostate would atrophy in men if the testes were removed, for it does so in dogs, and there is no reason to suppose its functional position, with regard to the sexual apparatus, different in them to what it is in us.

Granting all this, we are still far from having solved the problem before us; for, although a normal prostate atrophies, it does not necessarily follow that a morbid one will do so. Nor do we know enough about the hypertrophied prostate to say that this is even likely. If we could say that the enlarged prostate was the result of excessive sexual activity the case would be very different; but I am convinced that there is no proof of any kind that such a causal relationship exists. Buxton Browne says he is "more and more struck by the fact that prostatic hypertrophy often follows a second marriage or a marriage contracted late in life." This

vague statement is quite worthless. Besides, we must bear in mind the important fact, that the hypertrophy occurs, not during the period of greatest sexual activity, but when that function is on the wane.

I would have considered that the arguments in favour of castration were not such as to justify its application to man. I would have thought the proper course to pursue would have been to have obtained animals whose prostates had undergone hypertrophy—doubtless, a matter of difficulty—to have castrated them, and, if the results were satisfactory, I would have considered the experiment on man justifiable. Fortunately for surgery, others with better right to an opinion have not considered this intermediate step, with its accompanying delay, necessary; and now the operation has been performed quite a considerable number of times.

The operation was first performed by Ramm, of Christiania, in April, 1893. Since then by Haynes, Professor White, Fremont Smith, and Maunsell Moullin. The results are very satisfactory.

I need only refer in any detail to one case, and I will select the last which I have read of—an operation performed by Maunsell Moullin, in June last, and reported in the *British Medical Journal* of November 3. The patient was eighty-one years old. He had complete retention, due to an enormously enlarged prostate, as felt per rectum. No catheter could be passed, so the bladder was aspirated above the pubes. After this the necessity for some permanent operative relief became urgent, as the man could not sufficiently relieve himself, and he was losing ground. Supra-pubic prostatectomy was out of the question, so the choice only lay between a perineal drainage or castration. Moullin decided on attempting the latter, and performed the operation with the following results:—In ten days the prostate was smaller, and after three weeks all that could be felt per rectum was a fusiform thickening extending along the catheter, so small and soft that the shaft could be felt everywhere through it. An ordinary catheter could be passed with ease.

This result is truly wonderful; and all the other operations performed up to the present appear to have been nearly equally successful.

We may, then, safely conclude that castration can cause an atrophy of a hypertrophied prostate; and, further, that perhaps one would be justified in performing the operation in certain advanced cases as a substitute for perineal drainage. We must

remember, however, that, as an operation, it is still in the experimental stage.

This operation of castration brings us to the furthest limit of advance in this branch of surgery, and I will, in a few words, state the conclusions which can, I believe, fairly be drawn from a general review of the subject:—

1. Now, as formerly, the large majority of cases require no treatment except regular catheterism.

2. For some, however, this is insufficient, and we may then resort to supra-pubic prostatectomy if the patient seems to have sufficient strength.

3. For the very old and feeble there is at present only one operation recognised by surgery—*i.e.*, perineal drainage.

4. But now it seems possible that we may have in double castration an alternative measure. The results already obtained make us hopeful; but I think at present Irish surgery can afford to wait.

It only remains that I should express my thanks to many kind friends for the extensive assistance they have given me; and, in conclusion, I wish to thank you, gentlemen, for your courteous attention to my Address, which has, I fear, attained a length out of proportion to its interest.

ART. VII.—*Cocaïn Poisoning.*[a] By J. B. MATTISON, M.D.; Medical Director, Brooklyn Home for Habitués.

IT is "ancient history," more or less, since the writer began to present the record of toxic effects from cocaïn.

During the nearly nine years past dozens of deaths and hundreds of non-fatal cases from untoward effect of this drug have been placed before the profession, so that one is at a loss to know whether he who, at this late day, says, "It has hardly been reasonable to call it a poison in any ordinary quantity," is ignorant of this toxæmia, or is blinded by a feeling in its favour that prompts him to question this fact, and prevents him counselling that caution in its use which prudence undoubtedly demands.

A Boston oculist, Dr. J. A. Tenney, writing recently about "mishaps with cocaïn," used the language we have quoted, and, in so doing, may have intended to limit his statement regarding its non-toxic effect to his special field. If so, he might better have

[a] Read before the King's County (U.S.A.) Medical Society, October 16, 1894.

been more explicit, for, surely, it was not wise to disclaim, in a general way, its power as a *poison*—for *poison it truly is*.

In November, 1888, at a meeting of the New York Neurological Society, Dr. William A. Hammond, speaking of cocaïn, said "he did not believe any dose that could be taken was dangerous." Before that meeting ended, the writer challenged such a dangerous statement, and warned the members against accepting it; and during the next year presented such convincing proof that Dr. Hammond was wrong as to impel the *British Medical Journal* to assert, editorially—"If it were needful to produce more proof of the unsoundness of Dr. Hammond's opinion, Dr. Mattison has effectually done this."

Dr. Hammond has lived to see the day that he regrets, quite likely, having expressed such dangerous doctrine. He certainly has admitted his error; for, in discussing my paper on "Cocaïn Inebriety," read before the District of Columbia Medical Society, Washington, Christmas Eve, 1891, he frankly confessed that he was wrong, and avowed that *he* had nearly killed a patient with cocaïn.

No one can tell what mischief went in the wake of his expressed disbelief in the toxic power of this drug. Had it come from some obscure practitioner it would have passed almost unnoted; but with the weight of such authority as Hammond's professional prominence gave it, it was all the more dangerous.

The first lethal case of cocaïn poisoning was due to the hapless surgeon's reliance on its asserted use in large amount without harm. This case had a doubly tragic ending; for, not only did it cost the life of the patient—a young woman—but the unhappy surgeon, overcome by regret or remorse, committed *felo de se*.

What the outcome, fatal or non-fatal, all unrecorded it may be, of a like reliance on Dr. Hammond's statement?

Dr. Tenney seems to think that the taking of 18 grs. of cocaïn, subcutaneously, in three doses at short intervals, without death, which was Hammond's claim, proves it "hardly reasonable to call it a poison." We do not agree with him. It simply proves an exception to a rule, just such as obtains along numberless other lines, and in view of what history has since given us concerning cocaïn poisoning, it proves that it was a foolhardy affair, for it might have cost the venturer his life. Many a man, less a Hercules than Hammond, would have been promptly "gathered to his fathers."

There is little question that the earliest reports on cocaïn roused a fervour in its favour that led more than one to commend it with a zeal not tempered by that caution which prudence demands. Others, while not lauding it unduly, were inclined to disparage the warning note that was sounded early against it. I well recall a member of the Neurological Society, who expressed himself as much pleased with Dr. Hammond's assertion, regarding the non-harmful nature of cocaïn as one likely to lessen an unfounded prejudice against a valuable drug.

With the deadly record that has since been presented, it is quite probable that member (Leonard Corning) has changed his opinion, for he must now know the expressed fear of cocaïn had a foundation on fact.

History has repeated itself along lethal lines as regards cocaïn so often that it really seems surprising that anyone at this day should question its power for harm. It may not be known to all that cocaïn has killed in smaller dose than morphin—but that is a fact. It may not be known to all that cocaïn has killed in quicker time than morphin—but that is a fact.

Autumn before last, I reported, for the first time, through the courtesy of Dr. George B. Cushing, now of Wheeling, Va., this case:—Strong man walked into Bellevue Hospital, suffering from urine retention. Catheter disclosed stricture. One drachm of a four per cent. solution of cocaïn was thrown into urethra. Almost at once patient became greatly excited, and in a few seconds went into convulsions, so violent that it required the combined strength of doctor and nurse to hold him on the table. Amyl was promptly used; no reaction; in four minutes the man was dead.

This case, for which I thank Dr. J. E. Lumbard, New York City, is now first reported:—Man, aged 25, entered Manhattan Hospital, complaining of two days' urine retention. Catheter revealed traumatic stricture, due to a 2½-inch sewing needle put in urethra by chum, during a drunken frolic. Twenty minims of a four per cent. cocaïn solution were injected into urethra. Immediately patient went into convulsions, and, despite every effort, died. Autopsy in each case showed intense lung congestion.

Very recently two deaths from cocaïn—within a fortnight of each other—have been noted, and are now first reported.

On the last day of last month, a young woman visited a "complexion artist"—so called—in Chicago, to have a facial blemish removed. Sham electricity was used, it being really a

dummy battery, one sponge of which, saturated with a strong solution of carbolic acid, was held to the affected part, with the result of causing great pain. To relieve this, a four per cent. solution of cocaïn was freely applied. In a few minutes, the woman became excited, said she felt strange, walked to a window, and fell dead. No autopsy.

Four days ago—Friday last—a man, aged 26, entered the office of a Jersey City physician, to be operated on for a rectal fistula. Twenty minims of a four per cent. cocaïn solution were injected hypodermically for anæsthesia. No effect ensuing in ten minutes, twenty minims more were injected. In three minutes the man became unconscious and convulsed. One minute later he was dead. No autopsy.

The evidence to prove cocaïn a poison is now so ample that no excuse will avail to exonerate the doctor who, not heeding the lesson taught by the gruesome record, fails to use it with the care its toxic energy demands.

It is a drug powerless for good in certain conditions; but its power for ill must never be lost sight of, if one would conserve the best interests of those on whom it may seem wise to use it.

TOLYSAL OR SALICYLATE OF TOLYPYNILL.

The pyrexia is not affected by the first gramme dose of tolysal, but one hour after the second dose of a gramme the fall in temperature gradually begins falling the one-tenth of a degree of Cent. at a time; after the third dose the effect is very marked, a degree Cent. being usual. If the dose is again repeated until four or five grammes have been taken the fall reaches two degrees Cent. Its effects are particularly marked in typhoid fever. Profuse sweating follows its administration, and not unfrequently nausea, vomiting, vertigo, and headache.—*Ther. Bl.*, No. 5; *Les Nouveaux Remèdes*, No. 16.

PENTAL.

Phillip (*Zeitsch. f. Kinderheilkunde*) recommends pental as the best anæsthetic for children. Its advantages are—(1) Anæsthesia occurs rapidly; (2) There is very seldom excitement; (3) Consciousness quickly returns; (4) No unpleasant after-effects. The cardiac irregularity and the cyanosis cease on discontinuing the anæsthesia. The cyanosis he considers to be due to a toxic action on the respiratory centre and to atonic contraction of the diaphragm and muscle of the glottis. His experience was gained from one thousand operations, all of which were successful.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Two Monographs on Malaria and the Parasites of Malarial Fevers. I. On Summer-Autumn Malarial Fevers. By E. MARCHIAFAVA and A. BIGNAMI. Translated by J. HARRY THOMPSON, A.M., M.D. *II. The Malarial Parasites; a description based upon observations made by the author and other observers.* By JULIUS MANNABERG. Translated by R. W. FELKIN, M.D. London: The New Sydenham Society. 1894. Pp. 428.

THE New Sydenham Society has issued few volumes of greater interest than that before us. The life-history of the malarial parasite is a true romance of science, and, independently of its scientific interest, its discovery has thrown much light on the obscure problems connected with malarial diseases which have hitherto defied solution, has greatly facilitated the diagnosis of doubtful cases of this class of diseases, and has given a rational basis for their treatment.

It would be impossible for us to attempt an analysis of these two remarkable monographs, which have been so admirably translated, since every page is filled with minute descriptive details and with close reasoning founded on the facts observed. We must limit our notice to a general outline of the contents of the papers, which will, we hope, be carefully read by all who feel an interest in one of the most fascinating and important advances of recent scientific medicine.

The monograph of the Italian authors, after a short introduction stating the scope of the work, gives a classification of the malarial fevers, which are divided into two great groups. In the first are included the tertians and quartans which occur at Rome during the Spring and Winter. If quotidians occur in this group they are either double tertians or triple quartans. These fevers are of a mild character and yield readily to treatment. To the second group belong the severe fevers of the Summer and Autumn. These are true quotidians and malignant tertians. To the latter belong the malignant intermittent fevers and the greater number of the sub-continued. In each case the disease is produced by a

parasite, which lives in the blood corpuscles, and which goes through a cycle of developmental changes. The parasite is different in each case, and the time taken for it to complete one cycle of its life-history is the time between two successive attacks of fever—*i.e.*, 24 hours in true quotidians, twice 24 hours in tertians, three times 24 hours in quartans. These parasites as they are met with in the Winter and Spring fevers are first described. Then the Summer-Autumn fevers are considered. One chapter is devoted to a historical sketch of the opinions of other writers, and then we have chapters on the quotidians and tertians, giving the authors' own observations and opinions. Here we have a careful description of the parasite and its various phases of development, and the relation borne by them to the different stages of the disease. Particular notice is taken of the remarkable crescentic bodies, which are only met with in these severe types of fever. Many clinical cases are recorded, and several temperature charts are appended, which show the microscopic appearances at each stage of the fever, and the effect of quinine on the parasite.

After a chapter on the diagnosis of the different parasitic varieties, comes a most valuable chapter on the malignant fevers, in which different types of malignancy are described, and their explanation deduced from the biological conditions of the parasites. The great number of parasitic individuals present, the mechanical obstruction of the capillary vessels, chiefly those of the brain, and the toxins developed at the time of sporulation, all receive ample notice. In this chapter, also, we find numerous clinical histories.

The next chapter describes the action of quinine on the parasite, and shows that the rules for the administration of the drug which have been arrived at empirically, admit of the most satisfactory explanation from the poisonous action on the parasite—an action which is exerted only at certain stages of its evolution. The frequent failure of quinine in malignant cases is explained, and rules are laid down for the administration of the remedy in the Summer-Autumn fevers.

A most interesting chapter on phagocytosis—as observed in the blood, spleen, and bone marrow, and its difference in the different fevers, together with the part played by this process in the spontaneous recovery or cure by quinine—completes the work. A number of notes by the authors, and four appendices are added. Besides the temperature charts, the paper is illustrated by a coloured plate showing the appearance of the parasite.

Dr. Mannaberg's monograph deals less with the clinical side of malarial diseases than with the descriptive history of the parasites which produce them. After a good historical introduction, the methods of investigation are carefully given. This chapter will be of great service to all those who are inexperienced in this class of work. The rules to be observed in examining fresh specimens of blood, and the best mode of staining and preserving them as permanent objects, are well and clearly given. The results of inoculations of the blood of malarial patients on animals and on human beings are described, and the attempts which have been made to cultivate the parasite outside the body—attempts which have as yet met with uniform failure.

The next chapter, on the general and special morphology of the malarial parasite, is, of course, the nucleus of the work. All the different elements of the organisms are carefully described and illustrated by the figures which are contained in four beautifully executed coloured plates. Except in the condition of the crescentic bodies, the parasite is without a cuticle. At first it lives on the outside of the red blood corpuscle, merely adherent to it, but subsequently becomes intraglobular and completes its development in the interior of the corpuscle. The recently recognised nucleus and nucleolus are described, and the different kinds of motion manifested by the parasite.

These are the amœboid movements, the movements of the pigment and the movements of the flagella. The flagellated organisms are to be met with in all cases of malaria in which the parasites are numerous, and are persistently examined. The free flagella are the only forms of the parasite which possess the power of changing their locality. They are to be considered a necessary attribute in a distinct stage of its development, as they are the organs which enable the parasite to adapt itself to a saprophytic condition. The different varieties of spore formation are fully described. The much-disputed import of the crescentic bodies receives a very full consideration. The author looks on these as syzygies, formed from the conjugation of two individuals.

Mannaberg takes the side of those who hold that the different kinds of fever are each produced by its own kind of parasite, and holds that all the observations and experiments show that between the types of fever and the species of parasite an indisputable relation exists.

A comparison is made between the malarial parasites and some

of the lower forms of animal life, in order to determine the zoological position of the former; and it is shown that, while this determination cannot as yet be certainly made, the greatest resemblance exists between them and the coccidia, both in a morphological and specially in a biological relation, for both are necessarily cell parasites.

A description is given of the hæmatozoa which have been found in the blood of lower animals, and the symptoms to which they give rise. It is thought that the *Polymitis avium* may be most nearly compared with the flagellated bodies of the tertian parasite, for these are both developed from spherical bodies. The following is the classification of the malarial parasites adopted by the author:—

I. The malarial parasites with spore formation, without the formation of syzygies (*i.e.* without crescents).

(*a*) The quartan parasite.

(*b*) The tertian parasite.

II. The malarial parasites with spore formation, and with the formation of syzygies (that is, with crescents).

(*a*) The pigmented quotidian parasite.

(*b*) The unpigmented quotidian parasite.

(*c*) The malignant tertian parasite.

Each of these is then particularly described and illustrated, and their characteristics are admirably tabulated on page 372.

A chapter on diagnosis follows, and on the value of positive and negative microscopic evidence. In perfectly fresh infections during the first few days of the illness the parasite is sometimes missed, while the discovery of even a single parasite settles the diagnosis.

As regards the relation between the parasite and the disease, while the anæmia is explained by the destruction of the blood corpuscle, the coma by obstruction of the cerebral capillaries by the parasite, the malaria itself is regarded as a protozoa sepsis, and may be compared with ordinary bacteria sepsis.

The spontaneous cure of malaria is shown to depend on three factors—"upon the phagocytic action of the macrophages in the spleen and marrow (less upon that of the endothelium of the cerebral vessels), upon the circumstance that numerous parasites remain sterile, and, lastly, upon a destructive action of the fever paroxysm, which shows itself in the disintegration of numerous immature and mature parasites."

Quinine kills the parasite in the blood. It is most efficacious against the spores. Therefore the best time to administer the

drug is a few hours before the attack. Then the poison meets the spores as they are formed and kills them *in statu nascendi*. The crescents are unaffected by quinine.

A short chapter on the results of cultivation experiments, and conjectures as to the life of the parasite outside the human body completes the work. It is thought that the parasites do not exist as saprophytes, but live as parasites either in animal or vegetable organisms. The evidence for infection by drinking water is looked on as very defective, and it is thought that the disease is usually contracted by inhalation, although infection by the intestines is not considered as impossible. The period of incubation is usually 8-14 days, but may be much longer or shorter, probably depending on the dose of the poison received.

We should say that the volume is edited by Dr. T. Edmondston Charles, who has written an able and appreciating preface to the work.

Atlas of the Human Brain and the Course of the Nerve Fibres. By Dr. Edward Flatau, with a Preface by Prof. E. Mendel. Translated by Wm. Nathan, M.D., and John H. Carslaw, M.D. Berlin: S. Karger. Glasgow: F. Bauermeister. 1894. Super-royal 4to. Pp. 25.

This very handsome and useful work appears simultaneously in English, German, French, and Russian. It consists of a large double plate containing 13 admirably conceived and executed figures, showing diagrammatically the course of the fibres in the spinal cord and brain. This is followed by eight plates reproduced from photographs showing the surfaces and some important sections of the brain in natural size. The plates represent—I. The base of the brain. II. View of the entire brain from above, the hemispheres separated posteriorly so as to show the upper surface of the cerebellum. III. Horizontal section through the entire brain, showing the ventricles. IV. Horizontal section lower down, showing the central ganglia and internal capsule. V. The outer aspect of the left hemisphere, with pons, medulla oblongata and cerebellum. VI. Two frontal sections, one anterior to, the other behind the chiasma—the latter showing the subthalamic region and the entrance of the peduncles into the brain. VII. Two figures—viz., (1) the inner aspect of the left hemisphere, with median section through the cerebellum, pons, and medulla; (2) the peduncles,

pons and medulla, and surrounding region. The cerebellum is divided in the middle line sagittally, and the two halves are turned aside so as to show the floor of the fourth ventricle and corpora quadrigemina. The optic thalami and nucleus caudatus are seen, but the hemispheres are cut away. VIII. Two sagittal oblique sections, one through the whole brain, showing the central ganglia and the corona radiata, the other made somewhat more laterally.

These plates are beautiful works of art, being made in the best style of photogravure, and being reproduced from photographs there can be no question as to their accuracy. All the details are clearly represented, and the views are well chosen so as to give a complete idea of the anatomy of the entire organ.

The letterpress consists of a short but clear and intelligible account of the course of the fibres in the brain and cord, in accordance with the most recent views on the subject. Such a *resumé* will be found very useful by anyone who has to study this most intricate and difficult part of anatomy.

There is one passage in the author's preface to which we would take exception. He says, "There have been no important results to record for many years from work on the macroscopic anatomy of the brain." In view of the work which has been done on the anatomy of the convolutions, more particularly that of Professor Cunningham, we think this statement requires modification. With this small exception, however, we have nothing but praise for Dr. Flatau's work, both as regards the text and the plates.

Ueber hemiopische Pupillenreaktion. Separat-Abdruck aus klinische und anatomische Beiträge zur Pathologie des Gehirns. Theil III. VON DR. S. E. HENSCHEN, Professor in Upsala.

THIS reprint from Professor Henschen's classical work on the Pathology of the Brain gives the results of his observations on the course of the fibres which cause narrowing of the pupil when light falls on the retina. This question is best investigated in those cases where a unilateral lesion causes hemianopsia. In some of these cases when light is thrown on the blind half of the retina, the pupil contracts, in others not. By careful study of the lesions in the two cases, the path of the reflex fibres may be traced, and it can be seen how far they accompany the visual fibres, and where they separate from them, in order to reach the nucleus of the motor-oculi nerve.

After a sketch of the present state of our clinical knowledge of the condition of hemiopic pupillary reaction, the author shows that the condition really exists, and gives directions for the examination of the eye in order to demonstrate its presence or absence. He further insists that the *post-mortem* examination of the lesion must always be made by the microscope. He then gives the clinical cases which bear on the question, many of them observed by himself. He divides the cases into five groups, according to the position of the lesion.—I. Those in which the lesion lies behind or laterally from the external geniculate body. II. When it is in the central ganglia. III. When the tract is affected. IV. Chiasma cases; and V. Optic nerve cases. A detailed analysis of these cases and of the pathological lesions follows, together with an epitome of the local diagnostic importance of the latter. He then passes to the anatomical question of the course of the centripetal pupillary fibres. He shows that this is not to be solved by mere anatomical investigation, but only by experiment, or by clinico-anatomical investigation. After considering the attempts which have been made in this direction by various writers, he proceeds to give the results of his own researches. He shows that the fibres in question run in the optic nerve, chiasma—where they partially decussate, and optic tract, accompanying the latter at least as far as the frontal edge of the crus cerebri. They, however, do not enter the external geniculate body, but probably pass away towards the middle line between this and the frontal edge of the crus. We find, with the microscope, in this region only the fibres of the middle root of the optic nerve running this course. Some of them turn round the occipital edge of the crus, and running forward along its medial edge go to Luy's body, but the greater number divide into two bundles—a superficial and a deep—which surround the inner geniculate body or enter this ganglion. It is probably here that the pupillary fibres lie. From the medial side of the internal geniculate body to the pupillary motor nucleus on the floor of the aqueduct is only a step. As to the point where the pupillary fibres end, from a review of all the cases it is thought probable that this is in the anterior corpora quadrigemina, but Professor Henschen states distinctly that this matter is in his opinion not yet scientifically proved. The radiating fibres of the anterior corpora quadrigemina do not atrophy with the pupillary fibres, but arise probably from the cells of the cortical layer of the corpora quadrigemina, and communicate with the fibres of the

striatum lemnisci, by which the opticus-oculomotor reflex is brought about. Hence a lesion of the optic tract will cause hemianopsia, but if the lesion lies centrally from this, and affects the pupillary fibres (medial root of optic nerve) there will be hemianopic pupillary reaction without hemianopsia. As the internal geniculate body is concerned in hearing, there will be also defect of this sense on the opposite side. If the lesion extend further it will affect the sensory tract, and if further there will be hemiplegia. Such a group of symptoms has not yet been observed, but its occurrence would point to a lesion of the boundary between the pulvinar and the thalamus, and would be important to recognise, as it would contra-indicate operative interference. In front, the pupillary fibres start from the entire retina and run with the visual fibres in the optic nerve, and partially decussate with them at the chiasma. There is one case which seems to show that in the optic tract they lie as a special bundle at the dorso-medial edge.

The Disorders of Speech. By JOHN WYLLIE, M.D., &c. Edinburgh: Oliver & Boyd. Pp. 495.

THE contents of this volume have already appeared as a series of papers in the *Edinburgh Medical Journal.* They are of very great interest, and we think the author is well-advised in reprinting them in a collected form.

The first part, consisting of three chapters, is on the functional disorders of the vocal mechanism. The first chapter is on stammering. Speech involves two things—the production of voice in the larynx, and the articulatory movements in the mouth. These two movements must be well co-ordinated in time and degree, like the movements of the two hands of the violinist, whose bow-hand produces the sound which his left hand moulds into music by stopping the strings. In stammering the co-ordination is lost. In most cases there is a delayed action of the laryngeal mechanism, while in a few there is a delayed action of the oral mechanism, and in some of both mechanisms. In the analysis of the phenomena a very interesting description is given of the defect due to surcharge of the oral mechanism with energy, accompanied by an overflow into the upper part of the larynx, whereby the valvular action of the upper vocal cords, described many years ago by the author, comes into play, and by their approximation the exit of the air is prevented. "The patient's voice is at once interrupted; and with open mouth and

congested face, he silently struggles without effect to emit the imprisoned air." The whole article is full of interest, but for the sections on the physiological alphabet, the prognosis, treatment, and all detail, we must refer our readers to the work itself.

The second chapter is on the functional paralyses of the larynx. It is shown that in whispering the larynx is not inactive, but that although the approximation of the vocal cords is not complete, yet they are sufficiently brought together to produce a fricative noise when "the air passes through a triangular opening in the posterior part of the glottis between the projecting parts of the arytenoid cartilages, whose bodies remain apart, although their vocal processes are more or less closely approximated." The subjects of hysterical aphonia, when the patient can whisper, and hysterical mutism, when she can emit no vocal sound at all, are then considered; also the other leading paralytic and spasmodic affections produced by functional causes.

The third chapter is on the troubles of professional voice-users, the effects of fatigue, which are compared with the different forms of writers' cramp, and classified into the spasmodic, the tremulous, and the paralytic; and the pharyngeal troubles, chiefly follicular pharyngitis.

The second part of the work is on the development of speech and the developmental derangements. In the first chapter a most interesting account is given of the development of language in the normal child, drawn chiefly from the observations of Mr. Darwin and Professor Preyer on their own children. A useful diagram is given showing the gradual growth from expressive inarticulate sounds, through language of facial expression and gesture, and automatic exercises of the speech organs, such as babbling, crowing, mimic reading, echolalia, to intelligent speech.

In the next chapter the three functions of the voice are considered. These are—(1) An exercise for the lungs and respiratory muscles. (2) A means of expressing emotion. (3) Formation of words—in this it acts with oral articulation. While emotion can be expressed in various ways inarticulately, thought can find its full expression only in articulate words. "The special mechanisms are formed upon the reflex plan, with a sensory or receptive, and a motor or productive side, between which there are connecting fibres by which influences can travel forwards from the sensory to the motor centres, so that sounds heard by means of the receptive centre may, in echolalia, be imitated mechanically by the motor.

With the development of the ruling faculties of the nervous system—namely, the intelligence and the will—command is taken by these faculties of the reflex mechanism of speech. Sounds formerly meaningless to the child are now interpreted as words with definite meaning; and soon, with ever-increasing success, the productive side of the mechanism is compelled to reproduce these words by efforts of the will." The defects of speech, manifested by idiots of various degree, are made the subject of an attractive section, in which several illustrative cases are recorded. From these it is shown—"(1) That lalling (difficulty of articulating letter-sounds, due to a want of precision in the action of the oral articulative mechanism) is the leading defect in the speech of imbeciles. (2) That stammering is occasionally associated with it. (3) That in the lower grades of imbecility, babbling, grunting, echolalia, and the use of words of their own invention, are met with in association with conditions of mental development closely corresponding to the conditions with which they are associated in the development of normal children."

The following chapter treats—first, of dumbness in persons who are neither deaf nor imbecile. This is a condition which was first described by the late Sir William Wilde. It depends on various causes—some connected with the organs of articulation; others connected with mental defects—such that the intelligence "is strong enough to have acquired the power of interpreting words, but too weak to train the motor side of the speech-centres to their production." In this chapter the language of deaf mutes is dealt with, and most valuable suggestions are made to facilitate the teaching of lip-language to English patients, where, in consequence of the want of correspondence between the spelling and pronunciation, the difficulty is peculiarly great.

The last chapter of this part is on the development of speech in the human race. The classification of languages, the origin of written language, the invention of printing, and printing for the blind, the views of Max Müller, who holds that roots are ultimate facts, and the opinions of those who hold that language is imitative, are fully discussed and criticised. Indeed this whole chapter is most interesting reading.

The third part is on speech in its relations to diseases of the nervous system. The first chapter is on speech in its relation to insanity. The following is the plan followed by the author:—

"1. To make the mind our first standpoint, and to give a few illustrations of the faithful manner in which the disorder of the mind is mirrored in the speech of the patient.

"2. To treat of speech hallucinations and other disorders of action that are met with in insanity in connection with disturbances of the cortical speech centres.

"3. To treat separately of the affections of speech in Dementia, showing how in such cases the decay of speech is slower than the decay of thought; and how, in some of them, the disease of the mental cortex spreads downwards into those cells of the cortex that form the executive motor centres for articulation, thus causing the appearance of an ominous paralytic element in articulation that is of the greatest significance both diagnostically and prognostically."

We would call attention to the interesting account given in this chapter of the hallucinations which are due to abnormal vividness of psychomotor word-images, both of speaking and writing.

The next six chapters deal with the subject of aphasia. It would be impossible for us to follow the author through this subject, but we may say that, for fulness of detail and clearness of description, these chapters have few, if any equals in our language. The different simpler varieties of aphasia are first described and illustrated by numerous cases, both original and drawn from the writings of other authors. Auditory aphasia, motor aphasia or aphemia, with conduction aphasia, visual aphasia, and graphic motor aphasia, are described in successive chapters. Then some of the additional simple forms, recognised by Lichtheim and Wernicke, are dealt with, and finally the compound varieties—compound sensory, compound motor, and total aphasia.

It would be impossible to speak too highly of the author's treatment of this difficult but most important and interesting subject. We have never read any account of these conditions which is so easy to grasp and at the same time so full and accurate.

A section of immense importance is added on the method of case-taking. There can be no doubt that a great advance would be achieved in the study of most diseases if a uniform system of case-taking could be adopted, similar to the method of conducting *post-mortem* examinations introduced by Virchow, and now almost universally followed. In a subject of such difficulty as aphasia, the method of the author will be found to give enormous assistance, and we hope that it will be very generally practised. The subject of aphasia is concluded by a chapter on aphasia and other disturb-

ances of speech, in relation to evanescent organic affections and functional disorders of the cerebral cortex. The final chapter of the work deals with the disturbances of speech situated below the cortex, and is headed, "Dysarthric and Anarthric Disturbances of Speech due to Lesions affecting the Motor Speech-tracts."

In an appendix three very interesting cases of speech disturbance are recorded; and the author has reprinted his graduation thesis on the physiology of the larnyx, published in 1866; a work which has not received from physiologists the attention it deserves, and which we hope will now meet with its due meed of recognition.

In conclusion, we must again express our high appreciation of this work which cannot fail to excite the interest, not only of all those who have to do with diseases of the nervous system, but also of psychologists and of everyone interested in the study of language in its largest sense.

The Johns Hopkins Hospital Reports. Vol. IV., No. 4–5. Report in Neurology II. Baltimore. 1894. Pp. 127.

THE papers in this part of the Reports are seven in number, and are all from the pen of Dr. Henry J. Berkley.

The first article is a valuable report on dementia paralytica in the negro race. It appears that since the abolition of slavery insanity has greatly increased among the coloured population of the United States. Five cases are recorded, in all of which autopsies were made, and in two a most complete microscopic examination of the brain and cord was carried out. The following is the author's summary of the results obtained :—

"The morbid histology of the disease in the negro differs in no essential point from the same affection in the white race; there are the same alterations of the blood vessels' sheaths, probably occasioning local hyperæmic states and dilatations most noticeable in the smaller vessels; changes in the perivascular lymph flow from the widening of the channels, thickening of the lymph sheaths, and later filling up of the perivascular spaces with round cell proliferation, consequent malnutrition of the nerve elements, granulo-fatty degeneration of the cells, with rarer myeline changes, alterations of the nuclei, secondary atrophy of the cell structures, and consequent degradation of those medullated fibres that have their origin in these cells. Accompanying, or following the retrograde process in the nerve elements, and as a direct result of the want of proper nutrition, a sub-inflammatory condition of the connective

tissue elements is set up; the spider cells, from their low organisation and more direct relations with the vascular system, continue to grow and multiply (while the higher organised nerve structures decay from the want of proper food); the tentacles of the glia elements become coarser and more visible, they feed upon the disintegrating nerve structures, increase indefinitely, and absorb completely the most disintegrated nerve cell structures, and finally form (in places) a thickly interwoven meshwork of finer and coarser fibrillæ, mingled occasionally with the round nuclei of the cell body.

"For all practical purposes we have a diffuse pre-senile atrophy of the whole brain, occurring with far greater virulence than the atrophy of old age, and originating in a primary alteration of the sheaths of the vascular channels, from a cause which originates in some habit of the person, or perhaps in a constitutional defect in the tissues of the patients themselves."

The remaining papers are on histological subjects, the investigation being carried out by means of modifications of Golgi's silver method.

The first deals with the liver. The nerves of this organ have frequently been the subject of examination, and an admirable *résumé* is given of the work previously done on them. The author finds that the vessels—both portal vein and hepatic artery—are surrounded by a close plexus of nerves. So are the ducts. Some of the nerves supply the muscular walls, while others appear to penetrate between the cells of the lining epithelium. Partly derived from the vascular plexuses are fibres which run between the hepatic cells, but terminate without penetrating the protoplasm.

The bile capillaries in the rabbit's liver are next described. They have no demonstrable wall, although it is thought probable that one exists. They are seen to send off short diverticula which extend into the interior of the hepatic cells, and by means of these it is believed that they take up the secretion.

Around the vessels peculiar perivascular cells occur, which are carefully described. They are in part identical with the stellate cells of Kupffer. Their protoplasm is filled with coarse granules, which are supposed to be derived from some constituent of the food absorbed by the portal vessels, and from them passed on to the perivascular cells.

The next article deals with the distribution of nerves in the lungs. Numerous animals were examined, but the best results were got with the grey rat. The plexus of nerves around the

bronchial arteries was found to be very extensive, and much better developed than that around the bronchial tubes with which it freely communicates. Numerous fibres extend between the air vesicles, and supply, probably, scattered muscle cells, as an epithelial ending could not be detected. In the bronchial tubes some of the fibres terminate by knobs on, not in, the muscular cells, and in the smaller tubes endings between the epithelial cells were seen. The arrangement of the ganglion cells, and of the nodal enlargements on the fibres is also described.

A very valuable article follows on the intrinsic nerve supply of the cardiac ventricles in certain vertebrates. The conclusions arrived at are given in the following propositions :—

"1. The interspaces of the muscular bundles of the heart of mammalians, batrachians, amiurus, chelonians, and aves, are thickly filled, from the apex of the ventricles to the auriculo-ventricular groove, by a dense network of coarser and finer anastomosing nerve fibres, which touch at some point each bundle, but end terminations are not always to be found in contact with every muscular cell.

"2. The terminal apparatus of the varicose networks acting upon the muscular fibres, is most frequently at the end of a short transverse ramus, arising in the course of a longitudinal fibre, and has always the aspect of a simple bulb of varying size.

"3. Neural enlargements of considerable diameter are found developed in all the species of animals examined, upon the fibres of the intermuscular network. These neural swellings are probably nucleated. Transition forms from the smallest varicosity on the thinnest nerve fibre to enlargements 10 μ. or longer, may be found in all well-stained sections.

"4. Nerve cells of the sympathetic system have a probable existence within the ventricular walls, and are in form spindle, pyramidal, or stomach shaped. The axis cylinders from these cells (mouse) are directly connected with the fibres of the varicose plexuses. A spray of terminal fibres upon the isolated cells is probable.

"5. More complex end-apparatus than the simple bulb of the varicose networks has only been seen within the ventricles of the highest orders of vertebrates examined, the dog, mouse, and albino rat, but from the rarity of the observations their constant presence is by no means positive, but is probable. True end plates have not been found.

"6. All the eight species of animals examined presented similar intrinsic ventricular nervous structures, muscular networks with simple bulbar end-apparatus, neural thickenings and cell-like bodies resembling small ganglionic nerve cells, though of different forms, but complex endings of the fibres were seen only in three of the varieties."

In the submaxillary gland of mus musculus, besides the nerves on the vessels and ducts, fibres were found outside the basement membrane of the alveoli, and others, which having penetrated this, terminated either between it and the attached ends of the epithelial cells or in the cementing substance between the latter. The terminations are by rounded knobs.

In the thyroid gland of the dog the arrangement was, on the whole, similar, but the nerves were fewer and finer than in the salivary glands, and most of the terminations were more cone-shaped than round.

The last article, on the nerve elements of the pituitary gland of the dog, contains much that is of the greatest interest. The nerve terminations in the anterior lobe between the epithelial cells follows the arrangement commonly seen in glandular structures. The posterior lobe contains many nerve cells, neuroglia cells of different kinds—and also epithelial elements. These are arranged externally as an outer lamina of slightly irregular ependymal cells. Then follows a more internal zone of varying depth, which is in places arranged in distinct acini. This secretory region passes into a central one of small rounded and polygonal cells, separated by connective tissue partitions containing blood vessels and numerous scattered nervous and other cells. It is pointed out that the structures found by Andriezen in the pituitary of amocœtes—namely, a duct leading into the ventricles of the brain, surrounded by nerve cells, together with a glandular organ, are still met with as high up in the animal scale as the dog.

"The epithelial structures surrounding the proper nervous portion of the pituitary, are hardly to be accounted for except on the supposition that they originally enclosed a group of nerve cells, whose processes, probably through a connection with peculiar neuro-epithelial cells, had the function of testing the water entering the infundibular canal, and that after this function had become lost in the gradual ascent in animal life, these cells became metamorphosed into cells having a secretory function, in part homologous with those of the anterior lobe, and probably originated from an offshoot of the same buccal epithelium that formed the substance of the anterior lobe. The nerve cells of the lobe likewise underwent partial changes, a group of them remaining near their former situation, and retained somewhat of their old characteristics, while the deeper ones became more scattered through the infiltration of new cellular elements between them,

even to the extent of producing a partial loss of function, and consequent prevention of their further and higher organisation."

The text of the articles in this part of the Reports is illustrated by nine admirably executed plates. We think Dr. Berkley is much to be congratulated on the valuable contributions he has made in these papers to the solution of many most obscure and difficult anatomical problems.

A Text-Book of Pathology, Systematic and Practical. By D. J. HAMILTON, M.B., F.R.S.E., F.R.C.S.E.; Professor of Pathology, University of Aberdeen. Copiously illustrated. Vol. II., Parts I. and II. London: Macmillan & Co. 1894. Pp. 1,139.

THESE volumes complete Prof. Hamilton's work on Pathology, the first volume of which was published some five years ago. The publishers have done wisely in dividing this second volume into two parts, otherwise from its size it would have formed a very unhandy volume.

It is, undoubtedly, the most ambitious work on pathology that has appeared in the English language. It is intended not only to give an account of morbid anatomy and pathology proper, but also of clinical and practical pathology, and pathological chemistry. A good deal of anatomy and physiology is also contained in it, as well as the pathological explanation of many of the symptoms and signs which occur in disease.

The first volume reviewed in this journal in May, 1889, is divided into three sections:—I. Technical, describing the processes, re-agents, &c.; II. Containing an account of General Pathological Processes; III. Relating to Tumours, the Blood, and the Organs of Circulation. This second volume commences with the Respiratory System. In this as well as in all other sections of the work the pathology of so-called functional diseases is as fully discussed as of those which possess distinct and visible lesions. The account of diphtheria is full and excellent. Considering the interest now attaching to this disease, we may quote Prof. Hamilton's remarks on its bacillus:—"It appears to be an organism capable of existing in many degrees of virulent potentiality. If a series of cultivations are made from the pharynx as the disease is dying out, these seem to become successively weaker and weaker, although morpho-

logically the organism and the colonies it forms do not appear to differ from those of the most virulent type; there are all grades and degrees in the lethal propensities of the microphyte. It is seemingly widely spread abroad in nature, and, if in an attenuated state, it may alight on the fauces without working much mischief. Should the fauces be in a morbid state, however, should they be the site of an angina lacunaris, or of a scarlatinal inflammation, then the diphtheritic bacillus begins to grow on the affected parts, and accumulates virulent energy. And moreover, the oftener it is transferred from one subject to another, the more intense, *cæteris paribus*, the virulence becomes."

The article on Pleurisy is somewhat disappointing. The *rôle* of micro-organisms in connection with both its serous and purulent varieties is very slightly touched on.

The chapter on Lung Diseases opens with descriptions of the minute anatomy of the lung, of the movements of respiration, of the nervous influences which regulate and modify these movements, and of the physical signs met with in the chest in health and disease. From this may be gathered an idea of the number of subjects treated of in this work. Indeed, we are sometimes inclined to regret that so many, so to speak, extra subjects have been introduced; some of them are treated so briefly and incompletely that they become a source rather of weakness than of strength to the work. For example, the section on abnormal lung-sounds is very poor—no distinction is drawn between râles and rhonchi (moist and dry sounds), and no explanation is given of bronchial breathing.

In matters about which no certainty prevails, and various opposing views are held, Professor Hamilton contents himself with mentioning these different views. For example, in the case of the Pathology of Asthma, we have the bronchial spasm theory, the diaphragmatic spasm theory, Clark's theory, Leyden's theory; but we have no idea what importance the author ascribes to each or any of these. We think that when a professor undertakes to write an important and valuable book he should be prepared to weigh evidence as well as to state facts.

When we come, however, to the morbid anatomy of disease, we find Professor Hamilton at his best. Take for example Bronchitis. After a minute and careful description of the wall of a bronchus, he explains in a most vivid and clear manner how the epithelium proliferates, and becomes embryonic in character, how the base-

ment membrane becomes œdematous, &c., and all this description is copiously illustrated with woodcuts, which, although rough, show perfectly what the author wishes us to understand. All is so clear that no one can have the slighest difficulty in understanding the process. And this excellence of description of morbid processes is by no means confined to the chapter on the lungs; all through the book we are delighted with the clearness with which Professor Hamilton explains the nature of the microscopic changes which occur in disease.

The next section is on the Liver; then the Urinary Organs, and the Urine, are described both in health and in disease. The modes of examining the urine are fully discussed, and there is a chapter on the forms in which nitrogen is excreted by the kidneys. Then the Male and Female Generative Organs, and the Alimentary Canal, including Digestion and its Disorders, and the modes of examining the digestive fluids are treated of.

The section on the Nervous System is of considerable length, occupying 100 pages. Much space is devoted to a description of the structure of the brain as shown by the author's transparent sections, prepared by the gelatine-potash method. The subjects of aphasia and the cerebral connections of the optic apparatus are also described very fully, having 45 pages allotted to them. We are, however, disappointed to find no mention of all the recent work on the nerve cells of the brain done by Bevan Lewis, Andriezen, and others. It is curious, too, that, although the structure and functions of the hemispheres are so minutely described, there is no mention of the arrangement or functions of the nuclei in the medulla. General paralysis of the insane is not even mentioned—a serious and inexplicable omission. The pathology of the spinal cord is by no means as fully described as that of the brain.

While we call attention to these defects, we must add, that the section, as a whole, is admirably written, and contains a good deal of information which it would be difficult to find elsewhere.

The section on the Bones and Joints is very good; but that on the Skin is very poor, and largely consists of clinical descriptions of skin-diseases, such as are to be met with in every student's manual of Dermatology.

There is a very well illustrated chapter on Malformations. The descriptions are necessarily somewhat short, but are clear, and sufficient to explain all that is necessary.

The next section is on the Pathology of Diseases caused by Vegetable and Animal Parasites. It opens with a chapter on Systematic Bacteriology, describing the life-history, morphology, &c., of microbes. The chemical products of their growth—such as ptomaïns and albumoses—are described at some length. The author discusses phagocytosis and the chemical theories of immunity, and plainly leans to the latter views. A number of coloured plates are introduced, showing the appearances presented by pure cultures of microbes. With regard to the nature of the so-called cancer bodies, Prof. Hamilton thus concludes in his cautious style:—"These bodies have never been cultivated artificially, nor have they been inoculated, and it may be added that considerable doubt is expressed by some investigators as to their being parasites at all. It has been alleged they are merely degenerated nuclei. It cannot be said as yet that they have anything to do with the production of cancerous tumours. It is asserted that they have been detected in the epithelium of the skin after the application of a blister." We think that in this, as also in many other matters, the author might have given his readers at least a hint of what his own views are.

The last chapter treats of Animal Heat and Fever.

On several points Dr. Hamilton puts forward views opposed to those which are generally held. Perhaps the most important instance in which this occurs is in the case of catarrhal inflammation. In such cases—for example, in bronchitis or gonorrhœa—it is generally held that the cellular elements of the discharge are pus-cells, and certainly they look very like them. Prof. Hamilton, however, says these cells are derived from the inflamed epithelium. He states that at the beginning of the inflammation the superficial layers of epithelium desquamate, and then the deeper layers proliferate rapidly, and becoming detached in great numbers in their immature condition constitute the cellular element of the discharge. He also states that in cirrhosis of the liver, during exacerbations of the disease the liver cells become lengthened, and eventually split up into bundles of fibrous tissue. Such a transformation of epithelium into fibrous tissue, appears to us to be very problematical indeed.

At the end of each section, and again at the end of the book, a copious and valuable bibliography is given. The illustrations are are almost invariably instructive, though some of them are very rough. The figure of a female form on page 405, illustrative of

the normal position of the uterus, is pre-eminently macropygous, and the thigh shares in the hypertrophy.

Taking these three handsome volumes as a whole, we must warmly congratulate Prof. Hamilton on the successful completion of his Text-Book of Pathology. It is truly a great work, and is the most valuable and important English book on the subject with which we are acquainted.

A Manual of Ambulance. By J. SCOTT RIDDELL, C.M., M.B., M.A., &c. With numerous Illustrations and Full-page Plates. London: Charles Griffin & Co. 1894.

THE present decade is unquestionably rich in ambulance text-books, but we have no hesitation in pronouncing this to be the best of the throng. "The Manual is intended to serve not only for class use, but also as a means of reference in emergency cases, and for those using the smaller text-books. It is profusely illustrated, particularly in the sections in which anatomical and surgical details are treated." The contents are arranged under the headings of sixteen chapters: I. Outlines of Human Anatomy and Physiology; II. The Triangular Bandage and its Uses; III. The Roller Bandage and its Uses; IV. Fractures; V. Dislocations and Sprains; VI. Hæmorrhage; VII. Wounds; VIII. Insensibility and Fits; IX. Asphyxia and Drowning; X. Suffocation; XI. Poisoning; XII. Burns, Scalds, Frost-Bite, and Sunstroke; XIII. Removal of Foreign Bodies from the Eye, Ear, Nose, Throat, and Tissues; XIV. Ambulance Transport and Stretcher Drill; XV. The After-treatment of Ambulance Cases; XVI. Organisation and Management of Ambulance Classes. Closing the volume we have a very practical series of "Examination Papers in First Aid," followed by a carefully prepared Index.

The above series of headings indicate a very elaborate and complete programme, and we have much pleasure in bearing our cordial testimony to the thoroughness with which the author has filled in his outlines. He has succeeded in compressing an enormous amount of information into the comparatively small space which he has allowed himself. Where there is so much to notice, and so little to find fault with, criticism of details can serve little good purpose. Of course, in certain small instances we could manage to suggest improvement in style or greater accuracy in the details of practice. For instance, in the section on "Dog-Bites" (pp.

96-97), we are told that "the first thing to do in every case is, of course, to apply a tourniquet." We do not think so at all. We have seen a good many "dog-bites," and the present reviewer has had the unpleasant experience of being bitten more than once; and we have no hesitation in saying that the necessity for the application of a tourniquet is quite exceptional in cases of dog-bite. But we will not attempt to find any further small faults in a volume which we thoroughly admire and cordially recommend to our readers.

Refraction of the Eye: its Diagnosis and the Correction of its Errors. By H. Stanford Morton, M.B., F.R.C.S. Eng. Fifth Edition. London: H. K. Lewis. 1894. Small 8vo. Pp. 72.

In the present edition the author has revised and somewhat amplified the subject-matter; but as former editions left little to be desired the changes are unimportant. As we have fully reviewed former editions of this admirable little book we need not now do more than endorse our former commendations.

The Anatomy of the Nasal Cavity and its Accessory Sinuses: an Atlas for Practitioners and Students. By Dr. A. Onodi, Lecturer on Rhino-laryngology in the University of Budapest. Translated from the second edition by St. Clair Thomson, M.D., F.R.C.S. London: H. K. Lewis. 1895. Small 4to.

This most valuable contribution to the topographical anatomy of the nose and its accessory cavities and sinuses is excellently turned out in every particular. The introductory 19 pages are printed in good type, and the sixteen plates with which it is illustrated leave little to be desired. It has already passed through two Hungarian editions, has been translated into German and Italian, and is sure to command a ready sale to all who wish to obtain an accurate and comprehensive knowledge of the extremely difficult and important portion of the body with which it deals.

The author, in his preface, says: "In view of the great practical importance of the nasal cavity and its accessory sinuses, I have thought that it would be useful to make a series of anatomical specimens which would easily show the topographical relations of the region. From these I have prepared a set of plates, and I have been particularly careful to choose such as would be most

nstructive for practitioners and students as well as for specialists. Accordingly, I have selected those preparations which display the relations of those cavities with neighbouring organs (eye and ear), so that a glance at the plates should be sufficient to show their arrangement and mutual connections.

"The various cavities have been opened by sections made in different directions, and the preparations have then been faithfully reproduced by photography.

"The anatomical preparations were made in the laboratories of Professors G. von Mihalkovics and L. von Thanhoffer. The photographs were taken in the studio of Herr P. Kalmár, of Budapest; the woodcuts were prepared by Herr F. X. Matoloni, of Vienna."

The translator has done his part excellently, and in his preface states that as the work will be consulted chiefly on account of the accuracy and excellence of the engravings, he has, to facilitate their study, considerably enlarged the explanation which faces each plate. The sixteen plates have been chosen from among more than 50 sections. The selected preparation has been photographed and then engraved; consequently each figure is perfectly true to nature, and is not produced by combining in one picture the results of several dissections.

The book supplies a real want, and supplies it well.

The Theory and Practice of Medicine. By FREDERICK T. ROBERTS, M.D., B.Sc., F.R.C.P.; Professor of Materia Medica and Therapeutics, and of Clinical Medicine at University College; Physician to University College Hospital; &c. Ninth edition. London: H. K. Lewis. 1894. Pp. 1,168.

IN spite of all the works on practice of medicine that have of recent years been published, it is pleasant to see that our old friend, and the instructor of our student-days, "Roberts' Medicine," still holds its own. And, indeed, it fully deserves to keep that place which it has so long occupied, because it has progressed with the times, and with each succeeding edition have been incorporated the advances that have been made in medical science. This ninth edition is thoroughly up to date, and thus may be looked upon as equally modern as the latest book just out.

In this edition the chief alterations are that special consideration has been given to bacteriology; and that new sections have been

introduced dealing with general therapeutics of the principal systems and organs of the body. As well as this, the whole book has been carefully revised.

We regret that Dr. Roberts has not improved the woodcuts, some of which are useless and quite out of date, if not actually misleading. We notice, too, that *Runge* on page 35 ought to be *Bunge*.

Transactions of the American Orthopædic Association. Seventh Session. Held at St. Louis, Mo., September 19, 20, and 21, 1893. Volume VI. Philadelphia: Published by the Association. 1894.

Every new society is marked by the ardour and hopefulness of youth—nothing seems too great a task, and amongst their members there is no lack of confidence. Our American cousins of the Orthopædic Association are wanting in neither confidence nor hope, and, from the thirty-three communications in the present volume, we confess that their hopefulness has a good foundation in the work done in the past. In the present volume, of the many excellent papers we cannot do more than refer to Dr. H. Myre's double-lever stretching apparatus for the correction of club-foot; Dr. Wilson's report of 435 operations for the correction of club-foot; and the new paper and aluminium corsets described by Drs. Weigel and Phelps respectively, and Dr. Blanchard's paper giving a case of fragilitas ossium, in which the long bones of the patient were broken one hundred and six times.

Transactions of the Association of American Physicians. Ninth Session, held at Washington, D.C., May 29, 30, 31, and June 1, 1894. Vol. IX. Philadelphia. 1894. Pp. 292.

The Association of American Physicians numbers 111 members, of whom 72 (nearly 65 per cent.) attended the ninth session. It is mainly a northern society, and Philadelphia supplies a large proportion of its members. Twenty-four papers are printed in this handsome volume. The President, Dr. Reginald H. Fitz, of Boston, chose for the subject of his address the "Rise and Fall of the Licensed Physician in Massachusetts, 1781-1860." It is a sketch of the history of medical qualification in the State. From 1781 to 1859 the Massachusetts Medical Society was the sole source of licences to practise medicine in the State. In June,

1856, the Legislature incorporated the Homœopathic Medical Society; which "was authorized to examine all candidates for membership, and, if qualified, give them the approbation of the Society. Its members were declared exempt from militia service." The Massachusetts Medical Society now accepts homœopathic diplomas and certificates.

Prof. W. Gilman Thomson, of New York, in his Notes on the Observations of Malarial Organisms in connection with Enteric Fever, discusses the existence of a specific "typho-malarial" fever, in which two different infections act simultaneously. Six years ago, in the third volume of these *Transactions*, Dr. W. W. Johnston gave the results of inquiries addressed to 350 physicians practising along the Atlantic and Gulf sea-boards. The type of enteric fever was found to vary with locality; the existence of a "typho-malarial" fever being denied in the north-eastern States, affirmed in more than half of the answers from eastern North Carolina, South Carolina, Georgia, and Florida. Again, it was stated that in certain southern localities, enteric fever was complicated with malarial intoxication, and could not be treated successfully without quinine in considerable quantity. In New York, it seems almost universally accepted that there is no such complication, and that quinine is worse than useless. The author gives three New York cases in which the two diseases appeared to co-exist; and concludes that "while it is unwise to accept the term typho-malarial fever as indicating a third form of disease, which is neither typhoid fever nor malarial fever, it cannot be denied that the two latter diseases may co-exist. Case I. certainly proves that they may do so, and this in a part of the country in which this form of double infection is most unlooked for, and the other cases, although perhaps less striking, are at the least corroborative."

Dr. Frederick C. Shattuck, of Boston, contributes a paper specially important to the medical advisers of Life Assurance Societies, on "the frequency of renal albuminuria, as shown by albumin and casts, apart from Bright's disease, fever, or obvious cause of renal irritation." His object was "to determine approximately how frequently renal albuminuria and casts are encountered in the urine in the ordinary run of adults who consult a doctor, but present no evidence, outside of the urine, of primary or secondary renal disease. He found that "the percentage of urines containing albumin and casts rises steadily with each decade [of age] from the fourth to the eighth, while those free from

albumin and casts are in steadily decreasing percentage, and the proportion of those containing albumin but no casts remains nearly the same throughout." Dr. Shattuck's final conclusions are as follow:—

"1. Renal albuminuria, as proved by the presence of both albumin and casts, is much more common in adults quite apart from Bright's disease or any obvious source of renal irritation than is generally supposed. 2. The frequency increases steadily and progressively with advancing age. 3. This increase with age suggests the explanation that the albuminuria is often an indication of senile degeneration. 4. Though it cannot be regarded as yet as absolutely proved, it is highly probable that faint traces of albumin and hyaline and finely granular casts of small diameter are often, especially in those past fifty years of age, of little or no practical importance."

We must notice one other paper devoted to a subject of great practical importance. Dr. Musser, of Philadelphia, expresses his opinion that, in that city, syphilitic disease is diminishing both in frequency and in virulence. He is supported by the statistics of the Philadelphia Hospital, in which are treated the poorer classes affected with communicable syphilitic lesions. The figures may be taken, he thinks, as a "tolerably fair index" of the frequency of the disease in the general community. In the quinquennial period 1864-1868 the percentage of syphilitic cases treated was 6·68; in 1889-1892 it was 3·05. The author attributes the diminution in some measure to increased cleanliness in the population, and to the modern methods of treatment, "which lessen the duration of the contagious period of the disease," but he thinks it probable that the soil is become less favourable to the disease, or that its virus is attenuated. In the discussion on Dr. Musser's paper, Dr. Lynam stated that the virulence of syphilis in the Pacific Islands—which had been extreme—was diminishing; and he agreed in the opinion that the disease was subsiding in violence. Dr. Post's Boston experience led him, however, to a different conclusion. In the dispensary of that city syphilitic diseases showed a tendency to increase rather than to diminish.

The A-B-C Medical Diary and Visiting List, 1895. London: Charles Letts & Co, and Burroughs, Wellcome & Co.

We have been courteously presented with a copy of this excellent and most handy Diary by Messrs. Burroughs, Wellcome & Co.

As in past years, with the Medical Diary and Visiting List are combined brief therapeutic notes culled from recent publications and private communications under the distinctive term "Excerpta Therapeutica." This feature in the Diary will be found of real practical value by the physician or surgeon who wishes to refresh his memory about almost any drug in general use, whether pharmacopœial or extra-pharmacopœial. In the notes on therapeutics the authorities are quoted in each case.

The "A-B-C" is one of the best diaries and visiting lists with which we are acquainted.

The Sanitary Code of the Pentateuch. By the REV. C. G. K. GILLESPIE, A.K.C., A.C.P., &c. The Religious Tract Society. 1894.

WE have derived genuine pleasure from the perusal of this very interesting little volume. The author, who is evidently both an enthusiastic and accomplished sanitarian, has done good work in summarising the oldest and most interesting series of hygienic laws which has been transmitted to us, and he has done it well—so well that we can hardly stoop to take up any of the ordinary weapons of criticism. He has filled a distinct gap in medical literature. "Selections" and "Summaries" of the Levitical sanitary law have already been given by medical men. "But such summaries have not always grasped the whole scheme, or traced the reason actually assigned, by those best qualified to inform us, for what have to some appeared almost arbitrary exclusions, based possibly on mystic doctrine, or unscientific classifications merely exemplifying the simplicity of primitive times."

The little work before us is divided into eight chapters, followed by a "Conclusion," a "List of Scripture References," and a well-prepared "Index." The author has drawn upon the information afforded by the best authorities—original and second-hand. From the "Rabbinical Treatises" and "Critici Sacri" down to Fream's "Elements of Agriculture," the most illustrative comments have been extracted. As he too truly observes, in the opening paragraph of the first chapter, "the belief too commonly exists that our age is immeasurably ahead of all preceding times." Anyone who takes the trouble of reading this booklet will be obliged to conclude, from the best evidence, "that in this, as in other departments of know-

ledge, much had been forgotten, and re-discovered by modern research,"

As the Bible is the best known of all books, it is hardly necessary for a reviewer to enter into a discussion of the details of a sanitary system, which we must presume to be fairly familiar to all Christians. We prefer to refer the reader to the Scriptural text, and to the very interesting and thoroughly scientific commentary now before us. The great advantage to be gained by a perusal of the latter is the amount of scientific and historical light which is shed by the writer on passages whose importance might never have occurred to the ordinary reader. We cordially recommend this little work to the attention of everybody interested in the progress of sanitary science.

Dr. William Smellie and his Contemporaries; a Contribution to the History of Midwifery in the Eighteenth Century. By JOHN GLAISTER, M.D. Glasgow: James Maclehose & Sons, Publishers to the University. 1894.

THIS is a good work, well done. In a beautifully-printed octavo volume of 369 pages, Dr. Glaister gives us the history of an exemplary medical life, in the course of which innumerable, and often apparently insuperable, difficulties were bravely encountered and nobly overcome. The perusal of this book has given us an amount of intellectual pleasure which it is no exaggeration to call intense. It will be a healthy stimulus to the honourable ambition of every high-minded young man entering upon the practice of medicine to study this story of the career of William Smellie, from his comparatively humble home in Lanark to the establishment of his cosmopolitan fame in the English capital. His was a career of honourable exertion, in the course of which the want of money and of friends was very often found to oppose the blighting influence which have too frequently wrecked the career of high professional ambition.

The volume abounds in interesting and illustrative anecdote, and is brightened on all sides by side-lights from the medical literature of the period. When he went to London to try his fortune as a "humble apothecary and man-midwife," his genius and earnest energy soon had the usual effect of arousing bitter professional jealousy. "The fierce and malevolent criticism of William Douglas" is painful to read of: that of Mrs. Nihell, who

"was the most uncompromising opponent of man-midwifery," are more amusing. Smellie's enthusiasm for the improvement of his art led him to teaching, and his "*phantom*" soon became so famous as to arouse the ire of Mrs. Nihell. "This was," says she, "a wooden statue, representing a woman with child, whose belly was of leather, in which a bladder, full perhaps of small beer, represented the uterus, &c., &c." One of the chapters of the volume, which occupies 36 pages, gives an intensely interesting and comprehensive review of "The Literature of Midwifery from 1660–1760."

We recommend this volume to the notice of every reader who takes an interest in the past history of medicine, and to all who think that they are likely to profit by studying the example of the honourable career of a high-minded professional man.

Enlargement of the Prostate: its Treatment and Radical Cure. By C. W. MANSELL MOULLIN, M.A., M.D. Oxon.; F.R.C.S. London: H. K. Lewis. 1894.

IN this well-filled octavo volume of 176 pages the author deals with one of the most important problems of surgical practice—the causes, symptoms, and treatment of "Enlarged Prostate." He speaks with the well-earned practical experience which he has acquired in the wards of the London Hospital. He delivers his opinions with the confidence of a surgeon of practised skill, and with the zeal of a temperate enthusiast. In the first chapter he gives an excellent account of "The Normal Structure and Functions of the Prostate," and in the second he deals similarly with the "Enlarged Prostate." In the third chapter he deals with "The Causes of Prostatic Enlargement," and shows how the advancement of recent theory has come to influence his own faith in practice. "That the normal development of the gland is dependent upon that of the testes is undoubted. . . . That the enlargement disappears within a few weeks after the testes have been removed is now proved (see Chapter XI.). Probably, therefore, this abnormal growth is in some way conditioned by the state of the master-organs of the male sexual system."

The author is very hopeful with regard to the future of the operative treatment of enlargement of the prostate. The records of skilfully-performed prostatectomy are rapidly becoming more encouraging, and when all other sources of hope have failed,

castration may be resorted to as a certain cure, if the patient can bear this comparatively simple operation.

We cordially recommend this monograph to the attention of all practising surgeons.

Bulletin of the Harvard Medical Alumni Association, Number 7. Report of the Fourth Annual Meeting held in Boston, June 26, 1894. Boston. 1894. (With a Catalogue).

The Harvard Medical Alumni Association consists of all graduates of the Harvard Medical School who, being approved by the Council of the Association, pay an entrance fee of one dollar and an annual subscription of equal amount. It was organised in April, 1892, and now contains 1,131 members, "representing thirty-six States and Territories of the United States, the Dominion of Canada, and six foreign countries; and the membership roll comprises the names of more than one-half of the whole number of the graduates of the Harvard Medical School known to be living." Boston contributes 386 members; the rest of Massachusetts, 387; New York City, 36; other parts of the State, 23; Pennsylvania, 5. Only 80 members attended the annual meeting.

The members, having duly dined, were addressed by the outgoing President, Dr. Chadwick, of Boston; and we shall briefly notice some parts of his discourse. He reports that the legislature of Massachusetts had passed an Act for the Registration of Physicians and Surgeons. The assumption of the title of Doctor of Medicine, or M.D., by unauthorised persons is subjected to penalties; but no attempt is made to interfere with "clairvoyants, or persons practising hypnotism, magnetic healing, mind-cure, massage methods, Christian science, cosmopathic or any other method of healing." (This passage appears to be quoted from the Act). He gives a summary of the medical students of 1893-94, as follows:—Attending graduate courses, 26; fourth class, 38; third class, 114; second class, 133; first class, 135; total, 446. He does not anticipate any serious reduction in the number of students as a result of the adoption of a four-years' course of study. In 1894, sixteen students graduated after a four-years' course, 92 after three years' study.

From the Report, which was read after Dr. Chadwick's Address, we learn that the three-years' course in Harvard Medical School

is now finally superseded by a course of four-years' study. The last class of three-years' men was to graduate on the day following; and "the first of the required four-years' classes has just completed its second year, so that a year hence there will be no regular graduating class, except the last voluntary fourth class." We learn, also, that it is hoped ultimately to require the degree of A.B., "or its equivalent," as a condition of admission to the Medical School. Already the standard has been raised. After June, 1896, a knowledge, "considerably greater than that now required," of English, Latin, Physics, Chemistry, French or German, Algebra or Geometry or Botany, will be a necessary preliminary to admission to the Medical School.

Dr. Osler, Professor of Medicine in the Johns Hopkins University, Baltimore, also addressed the meeting. His account of the requirements of his University is of sufficient interest to quote in full—

"There are two points in which the Johns Hopkins Medical School differs from the other schools in the East. The first is in the nature of the preliminary requirements. We require the degree in arts or in science as evidence of a liberal education; and we require also a specified amount of training in physics, chemistry, and biology, with a reading knowledge of French and German—that is to say, a man must have had, in addition to classics and mathematics, full and practical instruction in chemistry, biology, physics, French, and German, and in general literature. The requirements in physics, chemistry, and biology are of such a character as to demand extended laboratory courses. Here, in reality, is the only essential difference between the Hopkins School and the other schools. It is a question whether the time required to enable a student to get his preliminary training in arts and science is not somewhat too long. An ideal arrangement prevails at the University of Cambridge, England, where the arts and medical courses in first years run concurrently, and a man graduates A.B. at the end of three years in the natural science tripos, and M.B. at the end of about two and a half years of additional study. His undergraduate work is largely in the sciences—biology, chemistry, physiology, and anatomy. At present, as the curriculum is arranged at the Hopkins University, it extends over seven years—three in the chemical-biological course of the college, and four in the Medical School. That is possibly too long, when one considers that a student wishes to spend a year in the hospital, and, if he can, a year abroad. It raises the age of self-support to twenty-seven or twenty-eight. I think that an arrangement such as exists at Cambridge, England, will be ultimately made in many of the medical schools con-

nected with the universities in this country, so that men may be able to take in the academical department much of the scientific work which will count for the degree of M.D."

The University of Dublin, Ireland, is uncommonly like that of "Cambridge, England," in this respect.

We are within measurable distance of co-education here. Johns Hopkins experience is interesting. Dr. Osler reports that "thirty-three and a third per cent. of the lady students admitted to the first year of the Medical Faculty of the Johns Hopkins University are at the end of one short session to be married," and asks despairingly "where will the class of lady students be at the end of the fourth?" There were, let us explain, but three. "In all other respects co-education is a great success."

Statistique et Observations de Chirurgie Hospitaliére. Par le Dr. Polaillon, Chirurgien de l'Hôtel-Dieu, Professeur agrégé à la Faculté de Médecine de Paris, Membre de l'Académie de Médecine. Paris: Octave Doin. 1894. Pp. 413.

This goodly volume contains statistics relating only to the lower extremity. M. Polaillon was in charge of 70 beds in the Pitié hospital and subsequently of 48 in the Hôtel-Dieu, besides special wards for ovariotomies and similar operations. His statistics, so far, give his experience of fourteen years from 1879. He classifies his surgical diseases regionally; subdividing into traumatic affections, organic, and malformations. His figures are not confined to operations; he thinks the results of treatment without operation are quite as interesting as statistics of the results of operations. 3,612 patients were treated without operation; on 1,137 operations were performed.

In general, 2,404 traumatic lesions yielded 2,364 cures or improvements, and 40 deaths. 2,345 organic affections gave 2,274 cures or improvements and 74 deaths. The fatal cases, arranged under four heads give the following percentages:—1. Deaths due to the original disease (33): traumatic, 0·34; organic, 1·07. 2. Deaths by accident or intercurrent disease (38): traumatic, 0·62; organic, 0·98. 3. Deaths due to old age or to antecedent tuberculosis or cancer (18): traumatic, 0·25; organic, 0·51. 4. Deaths resulting from operation (22): traumatic, 0·46; organic, 0·46.

Omitting 53 cases of trifling character, we have 1,084 operations. Those performed on soft parts gave a mortality of 3·10 per cent.;

those performed on joints and bones, 11·22. Only 1·75 per cent. of deaths (19 in 1,084 operations) were considered to be directly due to operation—eight by shock, seven by septicæmia following the operation, and four by tetanus.

The Ætiology of Osseous Deformities of the Head, Face, Jaws, and Teeth. By EUGENE S. TALBOT, M.D., D.D.S. Chicago: The W. T. Keener Company. Third Edition. 1894. Pp. 487.

THAT the teaching and methods of Darwin have made a deep impression on Dr. Talbot will be evident to those who read the work with which we now deal.

Where there is so much to notice in the vast mass of material which the author has patiently investigated and arranged, it is invidious to single out chapters as specially worthy of attention; however, the general plan of the book may be gathered from the following excerpt from the introduction:—

"The causation of deformities of the head, face, jaws, and teeth has not received the attention from scientists which its importance demands. Of late these deformities have been traced to climatic changes, race intermixture, heredity and social environment. The unstable conditions of this last, as shown in commercial civilisation, give rise to a tendency to the development of these conditions. The teeth, jaws and face have been variable factors in evolution, and hence are most readily affected by the forces tending to degeneracy; such conditions are easily affected by the factors arising out of the 'struggle for existence.'

"The law of the 'survival of the fittest' affects not only the entire organism but also the parts themselves. Some one part attains undue development. Such a product of degeneracy once obtained might, under proper conditions, remain, while the rest of the body returned to the normal type."

In dealing with the development of the jaws, Dr. Talbot has spared no pains to make his statistics complete, and in order to do so has pressed into his service many well-known men both in Europe and America, while observers in India and China have also contributed their share of the task. Some idea of the thoroughness of this investigation may be had from the fact that, in order to compare the relative sizes of the lateral diameter of older races and persons living at the present time, over 10,000 measurements were taken; these include an examination of the collections of skulls in the principal museums on both sides of the

Atlantic, and comprise Ancient Britons, Ancient Egyptians, and native races from the four quarters of the globe.

Not content with these measurements the author has also, in separate tables, given us the antero-posterior diameters and the height of the vault, these latter measurements being taken with ingenious little instruments specially devised by Dr. Talbot for this purpose.

The author, in tracing the association of physical degeneration with the criminal classes, has made some interesting observations on the anomalies found in prostitutes, showing that these women are quite a class in themselves, presenting marks of arrest of development and physical and mental degeneracy.

The cases that were examined for this purpose were not (Dr. Talbot tells us) specially selected but taken at random as the cases occurred in hospital, and from those which were undisfigured by syphilis.

Thus, in 150 prostitutes, the following abnormalities were noted:—

"Malformations of the head	62	women
Development of occipital protuberance	62	„
Very receding foreheads	18	„
Hydrocephalic	15	„
Various anomalies of face (prognathism, &c.)	64	„
Ogival palatine vault	38	„
Congenital division of palate	14	„
Vicious implantation of teeth	62	„
Hutchinson's and Parrot's teeth	19	„
Absence of lateral incisors	10	„
Badly margined ears (Morel)	16	„
Defective ears (deformed, &c.)	47	„
Anomalies of extremities	8	„
Local asphyxia	2	„"

The comparison of these cases with educated women and illiterate peasants is interesting, as 82 per cent of the prostitutes present more than a single anomaly at the same time, while among educated women there is found only 2 per cent of anomalies, and in the peasant class 14 per cent.

That modern anatomists have not quite mastered all that might be known about the antrum will be evident from a casual glance at Dr. Talbot's chapter on this very interesting subject.

The author begins by stating that to describe the antrum was

one of the most difficult tasks he had ever undertaken, and we have no difficulty in believing him, for while he gives many examples of what he considers abnormalities and evidences of degeneracy, we quite fail to perceive any hint as to what he considers a normal antrum should be with regard to size and shape; this is decidedly an omission, and doubtless one which the author will rectify in a future edition. However, there is much information contained in the chapter which will tend to correct many of our ideas as to the extent and possible variations in size and form of this cavity. That Dr. Talbot had unusual facilities for investigating the antrum may be gathered from the fact that he made an examination of 6,000 antra, and on the important point of where is the most suitable position to enter this cavity with a drill for purposes of drainage, he is decidedly of opinion that "always the safest locality to puncture the antrum is at a location just between the roots of the first permanent molar and the root of the second bicuspid. The opening should be made with a drill directed backward and inward. This part is nearly always on a level with the floor of the antrum, and the outer wall is very thin at that point." This position is slightly lower than that recommended by most operators, but it would certainly have the advantage of striking the antrum at its most dependant portion. The latter portion of this work includes important chapters on the causation of irregularities of the teeth. Like most American publications it is printed on good, toned paper, the type and illustrations being excellent.

A Syllabus of Lectures on Human Embryology; an Introduction to the Study of Obstetrics and Gynæcology for Medical Students and Practitioners. By WALTER PORTER MANTON, M.D. Philadelphia: The F. A. Davis Company; London: F. J. Rebman. 1894. Pp. 125.

THIS little book will be found very useful to both students and teachers of embryology. It consists of very good notes on embryology, which will serve either as headings for lectures or as an outline of the subject for students. It is well arranged, beginning with the anatomy of the female genitals; going on to the processes of spermagenesis and oögenesis; next describing the general development of the embryo, the uterine and fœtal membranes, placenta and utero-placental circulation; then giving the development of the special organs and parts, general considerations of the

child at birth, and changes in the maternal organism incident to pregnancy.

We might perhaps object that the embryology proper is rather too short in proportion to the other parts of the work, but we must remember that the work is an introduction to obstetrics and gynæcology and not a work on embryology *per se.* The text is illustrated with outline drawings borrowed from the best sources, and the pages are interleaved with blank paper for notes. A useful chapter on practical embryological work is given, and the volume concludes with a glossary of terms used in embryology, and a good index.

"PHOBIÆ."

THE *Boston Medical and Surgical Journal* notices a recent work of M. Gelineau on "Unhealthy Fears or Phobiæ." A complete list of these morbid mental conditions is given. "They are aichmophobia, or fear of sharp points, as of needles or pins; agoraphobia, or fear of open spaces, with a sub-variety: thalassophobia, or dread of the ocean; astrophobia, or fear of the stars and celestial space; claustrophobia, or fear of enclosed spaces; mysophobia, or fear of filth; hematophobia, dread of blood; necrophobia, or horror of dead bodies; thanatophobia, or dread of death; anthropophobia, or fear of crowds; monophobia, a fear of being left in solitude; bacillophobia, or fear of microbes; siderodromophobia, or dread of railways; pathophobia, or fear of disease, with many subdivisions, of which the most important and most frequent are anginophobia (fear of angina pectoris), ataxophobia, syphilophobia, lyssophobia (or fear of rabies), spermatophobia and zoöphobia (or fear of animals), which in its turn has subdivisions for cats, dogs, horses, mice, &c., *ad totum catalogum animalium.* Returning to the list, we find still kleptophobia, fear of becoming a kleptomaniac; pyrophobia, fear of matches; stasophobia, dread of standing upright; aërophobia, or dread of draughts of air; acrophobia, fear of high places; toxicophobia, a fear of poisons; demonophobia, a dread of the devil (this is rather rare). There are also a very great number of phobiæ peculiar to certain professional persons, as physicians, artists, merchants, which have yet to be Hellenized and classified. The culminating fear, however, the quintessence of dread, is the fear of having a fear, the dread of a dread, or phobophobia."

CHILBLAINS.

TINCTURE of digitalis, 6 grammes; thymol, 3 grammes; alcohol, 150 grammes; glycerine, 150 grammes. Mix. To be rubbed to the affected part.—*Les Nouveaux Remèdes*, No. 16.

PART III.

SPECIAL REPORTS.

REPORT ON THE PROGRESS OF SURGERY.

By R. Glasgow Patteson, B.Ch., Univ. Dubl.; Fellow and Member of the Court of Examiners, R.C.S.I.; Surgeon and Surgeon in charge of the Skin Department, St. Vincent's Hospital; Examiner in Pathology, Conjoint Scheme, Apothecaries' Hall.

SYNOPSIS:

I. MULTIPLE ADENOMATA OF THE RECTUM.
II. CASTRATION FOR SENILE HYPERPLASIA OF THE PROSTATE.
III. HÆMATOMA OF THE STERNO-MASTOID AND TORTICOLLIS.
IV. CIRCULAR ENTERORRHAPHY FOR GANGRENOUS HERNIA.
V. OPERATIONS FOR CANCER OF THE BREAST.
VI. TREATMENT OF ALOPECIA AREATA.
VII. ANTISEPTIC AND ASEPTIC SURGERY.

The progress of surgery, perhaps more than that of any other science, is essentially volcanic in character. Periods of abnormal activity are followed by periods of prolonged and equally abnormal quiescence. It is through just such a period of latency that we have been travelling during the past year, so that there is nothing of striking interest or of dazzling brilliancy to record. Nevertheless, the hidden fires have not been idle, and in many directions advances of permanent, if unheeded, benefit have been made. Operations which twelve months ago were tentatively put forward have been placed on a recognised basis as sound surgical procedures; while others, which were heralded in with loud acclaim, have passed away and joined the wandering shades that stalk by the troubled waters of the surgical Styx.

I. MULTIPLE ADENOMATA OF THE RECTUM.

This is a comparatively rare affection of the mucous membrane of the lower bowel (the so-called "mucous polypi"), and one that, so far as a limited search in surgical records shows, has not hitherto been brought within the domain of operative surgery. A brief

reference to the following case, published by Dr. Gerster, of New York, in the *Transactions of the American Surgical Association*, Vol. XI. p. 138, will therefore prove of interest. "The patient, a poorly nourished, anæmic boy of eighteen, stated that he had been suffering from pain and protrusion of a tumour on defæcation since about (*sic*) twelve years, the trouble becoming worse continually. Examination under anæsthesia showed that the rectal pouch was literally crowded full of soft, easily bleeding, pedunculated masses, the upper limit of which could not be reached by the finger. The sphincter being lax, it was very easy to evert the lowermost part of the rectum, when the protruding masses appeared to be as large as a large fist. They consisted of innumerable single and lobulated tumours, which were attached by pedicles of varying thickness to the rectal wall, and so close to each other that it was difficult to find even a small patch of normal mucous surface. All of these masses which could be conveniently reached by the aid of two Sims' vaginal specula were either burnt off at their base with the thermo-cautery, or, where their pedicles were rather massive, were first tied off and then removed. A careful microscopical examination of the neoplasms showed them to be true adenomata. The patient's wretched condition forbade a further extension of the measures directed against the neoplasms on that occasion. Under forced feeding matters improved so much that, four weeks after the first operation, a second, more extensive, attempt was deemed expedient. The coccyx and lower half of the sacrum being exposed by a median incision, the former and the lower segment of the latter up to the third sacral foramen were removed. The rectum was then laid open by an incision extending just from above the sphincter to the stump of the sacrum, whereupon the organ became very accessible by means of broad retractors. The adenomata, located well up in the sacral excavation, were then removed, either by ligature, or those that were attached by a broad base by the actual cautery. As a relapse was probable, the wound was left open to permit of a continuous supervision of the site of the disease, or eventually of a repetition of the treatment. This observation was carried on for two months subsequently, and a number of adenomatous nodules were again and again destroyed. Should the tendency to relapse not diminish, an extirpation of the diseased part of the gut will have to be considered, otherwise the gut will be closed by a longitudinal suture." In a note Dr. Gerster informs us that a plastic closure of the longitudinal incision was

subsequently done; but no further details of the case as to the condition of the bowel after the operation, or as to subsequent recurrence are so far forthcoming. These will be of extreme interest. Another point to which the author does not refer is the reason for undertaking such an extensive and serious operation. One can only presume, from the account given, that the extreme anæmia referred to was due to hæmorrhage from these growths; of course if that was the point of danger it required some such heroic treatment. Resection of portion of the sacrum along with the coccyx is now a recognised procedure in many cases of high malignant growths in connection with the bowel, but this is the first occasion, so far as can be gathered, in which it has been applied to the operative treatment of benign neoplasms of the rectum.

II. CASTRATION FOR SENILE HYPERPLASIA OF THE PROSTATE.

This subject was first brought forward at a meeting of the American Surgical Association in a most complete and suggestive essay by Dr. J. William White, of Philadelphia, published in Vol. XI. of the *Transactions*, p. 167, sqq., 1893. After a most exhaustive review of the literature of prostatic enlargement, the author dealt with the present position of surgery in regard to its treatment, entering fully into the various operative procedures that have been from time to time recommended either for its relief or permanent cure. A short account of the development of the bladder and prostatic portion of the urethra was given, and reference made to the analogy first pointed out by Velpeau, and subsequently emphasised by Sir Henry Thompson, between uterine fibro-myomata and the so-called "prostatic hypertrophy." Dr. White's attention was further drawn in this direction by the observations of John Hunter on castration in the bull, in which he found, as the result of the operation, that the prostate from being "soft and bulky" became "small, flabby, tough, and ligamentous."[a] Similar results in other animals were recorded in a paper published by Dr. Joseph Griffiths in the *Journal of Anatomy and Physiology* for 1890. While Dr. Griffiths' paper was primarily written with the object of proving that the prostate is in its essential significance a sexual and not a urinary organ, he in it incidentally

[a] Hunter does not explain in his remarks how an organ can be "tough and ligamentous," and, at the same time, "flabby." Perhaps we must excuse a little looseness in the use of qualifying adjectives.

alluded, as part of his case, to the effects that resulted from castration in eunuchs, dogs, cats, pigs, bullocks, sheep, and horses. "The behaviour of these accessory sexual glands" [*i.e.*, the prostate], he writes, "after the removal of the testes will, I think, enable us to decide whether, on the one hand, they are developed in relation to the generative function, and entirely owe their existence to the generative stimulus, or, on the other hand, whether they arise independently of the testes and are essentially developed in functional relation to the urethral, and serve to produce a secretion which has for its purpose the moistening of that channel."[a] The results of Dr. Griffiths' observations went entirely to prove the former hypothesis, and he found in all the cases of castration in these animals considerable diminution in size of the prostate gland with marked atrophy of its glandular and muscular elements, only traces of the former being left as islets amid dense bands of fibrous connective tissue. These observations were strengthened by cases previously published by Gruber and Bilharz showing the results on the prostate produced by castration in men.

Arguing then from these two postulates—1st, That "the growth, or growths, which made up the enlargement in prostatic hypertrophy, are analogous to those fibro-myomata so frequently found in the uterus," and if so the results of castration ought to be similar to those observed to follow oöphorectomy in the case of the uterine growths; and 2nd, That the recorded evidence in man and animals showed a decided shrinking of the prostate gland to be one of the constant results of castration; Dr. White instituted a control series of experiments in dogs as a preliminary to the adoption or suggestion of castration as a surgical procedure in these cases of senile enlargement of the gland. Thirty-five dogs and their prostates were weighed, and the average weight—15·37gr.—was taken as the standard. Dogs were then castrated and killed at varying intervals, and the prostates were carefully examined both macroscopically and microscopically. The results obtained were striking. In every case, even much sooner than was anticipated, there was a marked and rapid decrease in the size of the gland, associated with a diminution in weight of from 15 to 2·4 grammes. At the same time it was found microscopically that there was an almost complete atrophy of the glandular and muscular elements, the glandular suffering first and most markedly. Hence, as the result

[a] Loc. cit., p. 32.

of these experiments, and of the evidence very briefly reviewed above, Dr. White thought himself justified in at least suggesting operation in suitable cases, and put forward these two propositions:—

"(1) Does the evidence warrant us in believing that castration in cases of hypertrophied prostate would be followed by a disappearance or diminution of the growth?

"(2) If so, it is likely that the fact can ever be taken advantage of as a therapeutic measure?"

Naturally Dr. White's somewhat revolutionary and revulsive proposal was provocative of much discussion, and an answer to his second question was not long in forthcoming. As the subject is only in its infancy, and anything that throws light on it is at once helpful and instructive, a brief summary of all the recorded cases is here appended:—

Cases I. and II.—Ramm (*Centralblatt f. Chirurgie*, No. 35), operated in April, 1893, on two cases with the most encouraging results, as he reports so marked an improvement as to amount to a practical cure in both cases.

III., IV., V.—Haynes of Los Angelos, California, reports in March, 1894, three cases operated on in December, 1893. The first case was of two years standing; symptoms apparently not very severe; cured. The second was a bad case which required catheterism every two hours, in addition to which the patient had contracted the morphin habit in order to obtain relief from his intolerable sufferings. The cystitis was extreme. Results: Cystitis cured; catheter only necessary four or five times daily; complete recovery from morphinism, and marked improvement in general health. The third case was one in which the disease was in an early stage, but on account of the peculiar conformation of the prostate catheterism was impossible. The result was a complete cure.

It may be mentioned here that in one additional case Haynes, as an alternative measure, performed section of the vasa deferentia, but without any alleviation of symptoms. This is interesting in connection with a case in which Mr. Reginald Harrison, though strongly urged by his patient to perform castration, temporised by performing ligature of the vasa deferentia, and although the patient was alive several years after the operation, and reported

"well," no details are given as to the condition of the prostate gland.[a]

VI.—Dr. F. Smith, of Florida, operated on a very extreme case of prostatic obstruction, with bad cystitis. Fifteen weeks after the operation the cystitis was cured, urination was normal, and the patient had gained forty-five pounds in weight.

VII.—Dr. J. W. White, Jan., 1894.—In this case there was intense cystitis, all the urine being passed by the aid of a catheter and extremely offensive. The prostate was the size of an orange. Fourteen weeks after the operation the prostate was reduced to its normal size, and the urine was normal in every respect, but the power of emptying the bladder had not up to that period been regained. Further details of this case are wanting.

VIII.—This case, operated on by Dr. Powell, hardly comes within the true category of these we are considering, as the operation of castration was performed for a totally different cause. It was, however, followed by complete relief of the symptoms due to prostatic enlargement.

IX.—Mayer, in May, 1894, operated on a man, aged seventy, with cystitis, ammoniacal urine, tenesmus, and toxæmia, in whom catheterism was rapidly becoming impossible on account of pain and the size of the growth. Three weeks after the operation the urine was nearly normal in character, and the prostate was dwindling in size. Six weeks after operation the prostate had

[a] Meyer (Annals of Surgery, July, 1894), describes a case in which he ligatured the internal iliac arteries (Bier's method) for hypertrophied prostate in a man aged 55, who had had marked urinary trouble for over four years, and whose urine was purulent. Twelve hours after the operation the patient passed urine voluntarily for the first time within six months. There was marked atony of the bladder, yet continuous retention never set in again. The prostate became smaller, and the length of the urethra became reduced from 23½ to 21½ centimetres in six months (*B. M. J. Supplement*, Aug. 18, 1894). It may here be mentioned that in the discussion which took place on Dr. White's paper at the meeting of the American Surgical Association, Dr. J. Ewing Mears, of Philadelphia, suggested the alternative procedure of ligaturing the vasa deferentia. Dr. Mears further read a paper on this subject before the Philadelphia Academy of Surgery in November, 1894, advocating this procedure as an alternative mode of treatment in extreme cases of hypertrophied prostate, and urging that it was applicable in these cases where patients had a sentimental repugnance to castration. We do not see the difference, from a psychological point of view, between producing impotence by ligature of the vasa deferentia and by castration, and moreover, from the surgical point of view, we have yet to receive evidence as to the benefit of ligature, as those cases in which it has been tried hitherto have yielded none or negative results so far as the prostatic disease was concerned.

shrunk to its normal size, and the bladder was able, unassisted, to completely evacuate its contents, no catheter being used.

X.—Mansell Moullin reports a case in a man aged eighty-one, for whose relief supra-pubic aspiration had been several times called in requisition. After castration the improvement was immediate. In ten days the prostate was appreciably smaller, and in three weeks it had "practically disappeared." The bladder had begun to regain power, and the urine was nearly normal.

XI.—Thomas reports a case of fifteen years' standing, the patient being sixty-five years of age. There had been considerable distress before the operation, and after it there was considerable improvement, the patient only requiring to urinate three times a day. This case is very meagre in its details.

XII.—This case is reported by Dr. Ricketts. The patient was seventy-four years of age, and had suffered for some time. Improvement followed the operation almost immediately, the patient stating he had not had such ease for a year; he could sleep for four hours at a stretch, whereas formerly he had been compelled to get up every hour or oftener, micturition being necessary about thirty times daily.

XIII.—The last case on our list is only reported in the *British Medical Journal* of Jan. 5, 1895. by Mr. Swain. The patient was seventy-three years of age, and has suffered for five years from prostatic obstruction. Catheterism became impracticable, and as a last resource castration was performed. Three weeks after the operation a perceptible diminution in the size of the prostate was noticed; "but in the third, fourth, and fifth weeks the increasing atrophy appeared to progress more rapidly. . . At this time his general condition had much improved; his urine was normal—he sometimes passed half a pint at a time—but he could not hold his water for more than four or five hours in the daytime. There was no 'residual urine' in the bladder." The prostate meanwhile had diminished from the size of an orange to that of a large horse chestnut. Thirteen weeks after the operation the prostate was still smaller and firmer; the patient was able to dispense with a catheter, and did not require to get up at night to pass water; and the urine had completely returned to its normal characters. There was no cystitis.

These cases—all on record up to the present time—certainly form a striking object-lesson in the treatment of this most distressing of all the surgical complaints to which old age is liable. So

far, it must be admitted the results are encouraging. The strongest objection to the operation appears to be the sentimental one. But few healthy-minded men will, we imagine, object to the removal of appendages which have long ceased to be useful, when weighed in the balance with the life-long misery and torture caused by prostatic enlargement. It is only those who are the victims of a *psychopathia sexualis* who will preserve the reminiscences of past virility at the cost of a present and future bodily and mental enfeeblement. As Dr. White justly observes in summing up his remarks:—"There will be no lack of cases willing to submit to an operation almost painless, with a low mortality, and followed by no such unpleasant conditions as accompany persistent fistulous tracts, either supra-pubic or perineal, even although the operation carries with it the certainty of sacrificing whatever sexual power has survived the excessive, and often intolerable, suffering of such patients."

III. HÆMATOMA OF THE STERNO-MASTOID AND TORTICOLLIS.

The "chronic induration," or "tumour" of the sterno-mastoid muscle, as it has been variously named, is now generally recognised—since the publication of papers by Smith, Clutton, and earlier by Stromeyer, Dieffenbach, and others—to be due to a rupture of the fibres of the muscle, generally occurring at child-birth, and giving rise to a localised effusion of blood, or *hæmatoma*, with subsequent organisation and shrinkage of the fibrous tissue thus produced. In a recent paper (*Trans. Medico-Chirurg. Soc.*, 1894), Mr. D'Arcy Power points out the importance of this condition in relation to wry-neck. The age of "syphilitic induration" and grey powder is past; but many of these cases, as Mr. Power points out, pass on into a stage requiring surgical interference, when a certain degree of torticollis results from the subsequent shrinking of the new-formed scar-tissue. In this paper Mr. Power has collected 106 cases. In these "the swelling was situated in the upper and middle parts of the muscle in twenty-two, in the lower part in thirteen, in one the whole muscle was affected, whilst in the remaining cases the exact position is not noted. In connection with statistics, it may be as well to add here that in these 106 cases, recorded by English, American, German, French, and Belgian surgeons, the right sterno-mastoid muscle was the seat of injury forty-seven times, the left thirty-six times, and in five it was bilateral." Mr. Power then proceeds to enumerate the

cases in which wry-neck followed this condition, giving details of a series of cases of his own and others—principally Mr. Clutton's. As the result of his analysis he finds that "well-marked wry-neck occurred in 21 cases at least, out of a total of 106 cases of congenital hæmatoma which are recorded." As Mr. D'Arcy Power's paper gives the most recent conclusions that have been formulated on this much-debated subject, it may be well to transcribe them here in full:—

"1. Hæmatoma of the sterno-mastoid muscle may be due to intra-uterine injuries, which are rare, or to injuries at the time of birth, which are common.

"2. Congenital hæmatoma of the sterno-mastoid muscle occasionally predisposes to wry-neck in children who are otherwise healthy.

"3. Wry-neck due to hæmatoma of the sterno-mastoid varies in degree from the slightest and most transient form to one of such severity as to require tenotomy of the muscle for its cure. The wry-neck thus produced is not—so far as I have seen—accompanied by asymmetry of the face.

"4. Every child who has the misfortune to be injured in this manner must be carefully watched for a much longer period of time than is usually considered necessary, to obviate any tendency to the formation of a wry-neck.

"5. Surgeons should give more prolonged attention to children affected with hæmatoma of the sterno-mastoid muscle, to enable them to determine still more accurately what are the usual and ultimate effects of the injury."

IV. CIRCULAR ENTERORRHAPHY FOR GANGRENOUS HERNIA.

In the *Annals of Surgery* for June, 1894, Dr. M'Cosh relates three cases in which the gangrenous portion of the bowel had been dealt with by excision and immediate approximation of the divided ends—a method which he holds to be much preferable to any of the mechanical or other devices for the direct or lateral apposition of the ends of the gut after partial excisions. Sutures alone, he considers, give the requisite amount of safety; and while agreeing in the general principle here laid down, we cannot help urging against it that but few operators have the necessary experience and the requisite manipulative dexterity to bring a case of direct suture of the intestine to a successful issue. On the ground of

incompetency alone some simpler devices must be admitted into the general surgeon's *armamentarium chirurgicum.*

In the first case a man, aged twenty-five, had suffered for four years from an inguinal hernia on the right side which had been supported by a truss, with complete relief, until one day the truss was left off, and at the end of three days the hernia had become irreducible, with signs of inflammation. Taxis under ether failed, and the patient being in a state of collapse with stercoraceous vomiting, operation was decided on. The patient made an excellent recovery.

In the second case, a lady, aged forty-three, had been operated on for tubercular peritonitis three years previously. The cure was apparently perfect, and no tendency to hernial protrusion was at any time noticed in the cicatrix. Suddenly the author was called in to operate on a strangulated hernia, the existence of which had only been determined three days previously. The patient was in an extremely dangerous condition, considerably collapsed, and for twelve hours the vomiting had been of a stercoraceous character. She made an excellent recovery from the operation; and it was noticed with interest at the time that not the slightest trace could be found of the former tubercular peritonitis.

The third, and last, case was also a woman, sixty-six years of age, in whom strangulation had existed for forty-eight hours. The operation proved a complete success, and six years afterwards the patient, notwithstanding her age (72), was reported to be well and active. (Quoted in *B. M. J. Supplement*, July 7, 1894).

These cases are certainly deserving of note for two reasons: in two of the cases the age of the patients was not such as would lead one to anticipate a favourable prognosis; but even more so was the period at which the operation was undertaken. In all the cases the obstruction had been left until the intestine was gangrenous, the vomiting stercoraceous, and the patient dangerously collapsed. Success under these circumstances makes one hopeful.

V. OPERATIONS FOR CANCER OF THE BREAST.

In my "Report on Surgery" in the number of this Journal for August, 1893, I went fully into the question of the operative treatment of cancer of the breast, and the methods best calculated to prevent its recurrence. I have before me now the "Johns Hopkins Hospital Reports" for 1894, in which there is a valuable paper, contributed by Dr. William S. Halsted, on the

operations performed for the relief of mammary cancer in the hospital from June, 1889, to January, 1894—practically a period of almost five years. The operation practised by him is, if possible, even more radical than that to which attention was previously drawn, as will be evident from a few quotations from Dr. Halsted's paper. The number of cases operated on was fifty.

The author bases his principles of treatment, speaking broadly, on the great fact that in the large majority of cases microscopic examination shows that either the pectoral fascia, or the pectoral muscle itself, is involved in the cancerous process, except in the earliest stages. This observation is as old as Volkmann's classical paper on the subject, and as it is ever new and ever true it may be quoted here in full:—"I make it a rule," wrote Volkmann, "never to do a partial amputation for cancer of the breast, but remove the entire breast even for the smallest tumours, and at the same time I take away a liberal piece of skin. The skin-defect is, of course, very great when one operates in this manner, and the wound, in consequence, requires a long time for healing. Furthermore, in making the lower incision I cut right down to the pectoralis muscle and clean its fibres, as I would for a class-room dissection, carrying the knife parallel with the muscular fasciculi and penetrating into their interstices. The fascia of the muscle is accordingly entirely removed. I was led to adopt this procedure because, in microscopical examination, I repeatedly found when I had not expected it that the fascia was already carcinomatous, whereas the muscle was certainly not involved. In such cases a thick layer of apparently healthy fat separated the carcinoma from the pectoral muscle, and yet the cancerous growth, in places demonstrable only with the microscope, had shown its roots among the fibrous septa down between the fat lobules, and had reached and spread itself out in flat islands in the fascia. It seems to me, therefore, that the fascia serves for a time as a barrier, and is able to bring to a halt the spreading growth of a carcinoma." Volkmann's views were supported by the observations of Heidenhain and by the physiological researches of Ludwig and Sweigger-Seidel. The latter, in studying the lymphatics of fasciæ and tendons, found that there is an intricate network of lymphatic vessels on the surface of muscles and on the upper side of all fasciæ. *The direction of the lymphatic current is from the muscle to the fascia*, and not in the reverse direction. Hence the importance of the temporary barrier that the pectoral fascia interposes in all

cases to the spread of mammary cancer, and hence also the importance of its entire removal in all cases dealt with operatively. Dr. Halsted goes a step further. He advocates the removal in all cases of the greater portion of the pectoral muscles, which is in reality a revival of a very old surgical procedure. In his recently published monograph on *Diseases of the Breast*,[a] Mr. Roger Williams directs attention to the fact that these extreme radical operations, which were first extensively adopted in Germany and are ever being brought forth as new developments of up-to-date surgery in "the States," were really first formulated and practised by an English surgeon—Charles Moore, of St. Bartholomew's Hospital—and were by him communicated in a paper to the London Medico-Chirurgical Society, so far back as 1867, or more than a quarter of a century ago.[b] "All its fundamental essentials," writes Mr. Williams, "were clearly set forth, with illustrative cases, in a paper remarkable for its keen insight and sound judgment . . . . . Strange to relate, notwithstanding its completeness, the influence of this remarkable communication on contemporary surgical practice was almost *nil*—so difficult is it, in the hurly-burly of intellectual strife, to discriminate real merit." But if Dr. Moore's teachings were for a time relegated to the shelf and allowed to accumulate the dust of years, we have now at last the satisfaction of knowing that they are in every civilised country adopted as the fundamental basis of sound surgical practice.

The two essential dogmas laid down by Dr. Halsted, and printed by him in capitals, are here reproduced :—

"*The pectoralis major muscle, entire or all, except its clavicular portion, should be excised in every case of cancer of the breast, because the operator is enabled thereby to remove in one piece all of the suspected tissues.*

"The suspected tissues should be removed in one piece—(1) lest the wound become infected by the division of tissues invaded by the disease, or of lymphatic vessels containing cancer cells, and (2) because shreds or pieces of cancerous tissue might readily be overlooked in a piecemeal extirpation" (p. 10).

Dr. Halsted concludes his monograph by some interesting tables as to the comparative results obtained by partial and radical methods of operation. A brief summary of some of the more

[a] London: John Bale and Sons. 1894.

[b] On the Influence of Inadequate Operations on the Theory of Cancer.—Med. Chir. Trans. Vol. I., p. 245.

striking features may be recorded here. In Bergmann's clinic the percentage of local recurrence varied from 51 to 60; in Czerny's it was 62 per cent.; in Königs, 58-62 per cent.; in Volkmann's, 60 per cent.; in Lücke's, 66 per cent.; while in the author's fifty cases the percentage of local recurrence was 6, and of "regionary recurrence," 22. These figures show in a striking way the benefits that may be expected in the future when the importance of total extirpation of the cancerous process, as opposed to the removal of the cancerous growth, has been more fully appreciated and more widely practised by operating surgeons. When one has seen the terrible misery and suffering caused by local and regionary recurrences in cases of mammary cancer, where the disease had not been completely eradicated, one would gladly adopt any proceeding, even adding as it does materially to the gravity of the primary operation, that holds out the hope of relief from those terrors of mental anxiety and physical torture that render unendurable the last stages of that most insidious, probably, of all the Protean forms of malignant disease.

VI. TREATMENT OF ALOPECIA AREATA.

Though hardly a surgical affection in the proper sense of the term, alopecia areata is a disease of such wide diffusion, and comes so often under the care of the surgeon, that a brief reference to what has proved a most successful method of dealing with it may be of advantage and interest to many readers. Whether the *rationale* of the treatment is based on a theory of parasitic origin of the disease, or whether the results are due to the much simpler theory of counter-irritation, I know not; suffice it to say that pronounced benefit and absolute cure have followed from its application.

It is now two years and a half since I published in this Journal a note calling attention to the method recommended by Dr. L. Duncan Bulkley of New York, viz., the treatment of the affected patches with an almost pure (95 per cent.) solution of carbolic acid. The method of employing it I cannot do better than give in the author's own words: "A small swab of cotton wool on the end of a stick or wooden toothpick is employed, and having been dipped in the acid, is at first lightly brushed over the affected area, which is then afterwards well and firmly rubbed with the same for some seconds." The application should be extended for a little distance outside the affected area. At the time of publication I was unable

to speak from personal experience of this mode of treatment. I have now employed it in some ten cases, and in all with the most gratifying results. In many cases repeated applications, with of course the necessary intervals between each, are required, the strongest possible solution being employed; whereas, in other cases, only one or two of the strong applications are necessary, weaker ones being subsequently substituted. A good deal of pain, it must be admitted, is associated with this mode of treatment, but that, however, is as a rule gladly borne by the patients for cosmetic, if for no higher motives. A rather disappointing result occurred in two of my cases, in that the hair on the affected spot grew absolutely devoid of pigment, and the patients resented much the piebald appearance thus produced. However, fortunately in both cases, the hair after the lapse of some months, regained its normal hue *unaided*, much to my and the sufferers' relief. I have also found that painting with cocaïne as a preliminary, without in any degree diminishing the efficacy of the carbolic acid, modifies in a very marked degree the pain that usually follows for some hours the application of the acid.

NOTE.—The Section on ANTISEPTIC AND ASEPTIC SURGERY has been unavoidably postponed, and will be published as a separate article.

MEDICAL MEN IN NEW SOUTH WALES.

IN the cities and larger townships of the colony there is no lack of competent medical men, but in the newer and more remote districts they are too often conspicuous by their absence, and it is by no means unusual for the inhabitants of such places to advertise their willingness to guarantee a certain amount of income to a resident doctor. An experienced medical man, willing to "rough it" for a few years, will attain a competency much more rapidly than in England, especially if devoted to his profession, and skilled in the treatment of complicated cases. Medical specialists possess a wide field in Australia, where institutions for the treatment of eye and ear diseases, &c., are practically unknown.

CONGRESS FÜR INNERE MEDICIN.

DR. BÄUMLER, Professor of Medicine in the University of Freiburg, Baden, as Chairman of the Executive Committee, announces that this year's Congress of Practice of Medicine will take place, from the 2nd to the 5th of April, inclusive, at Munich, under the presidency of Dr. von Ziemssen.

THE LUCAN DAIRY PROCESS

For the Sterilization and Filtration of Milk.

THE paramount importance to everyone of avoiding contaminated milk, especially at times like this, when an epidemic is present in the city, is my reason for calling your attention to the above subject.

In 1893 I undertook to supply to the public

Pure Milk in Clean Vessels from Healthy Cows.

In order to fulfil these conditions I adopted elaborate precautions, of which I now give a brief *resumé*.

Cows.	Entirely grass fed in summer. Carefully housed, partly grass-fed, and regularly exercised in winter. Inspected at short intervals by experienced V.S.
Vessels.	Scalded thoroughly by super-heated steam. Lids cleansed by same method. Water used for washing certified by analysis to be safe.
Employees.	Regularly inspected by a Fellow of the Royal College of Surgeons. Suspended from duty on slightest complaint of illness.
Milk.	No foreign substance added. Samples frequently taken from our shops and carts by trustworthy inspectors, so as to check all possible adulteration.
Sterilization and Filtration.	(Patent Process.) Effected by passing the milk through a complicated series of filters, the efficiency of which is evidenced by the removal of all sediment from the milk. Then by subjecting the milk to the action of a sterilizer, it is rendered absolutely free from contamination.

R. G. NASH,
24 Parkgate-street, Dublin.

The fact that **Mr. Ernest Hart** has published reports of no less than **74 epidemics of disease**, afflicting **5,044 persons**, and caused by **pollution of milk**, ought to prove, even to the most sceptical, that in drinking carelessly-collected unsterilized milk they run a very serious risk.—*See Brit. Med. Jour., Sept., 1894.*

THE REPORT OF THE EMINENT BACTERIOLOGIST

Dr. EDMOND J. M'WEENEY, M.A.,

Professor of Pathology, University Medical School, and Pathologist to the Mater Misericordiæ Hospital, Dublin.

"*To the Manager, Lucan Dairy.*

"I have frequently and carefully examined the process of sterilization by heat and filtration to which the milk of the LUCAN DAIRY is subjected under Nash's patent process; and I have personally collected many samples of the milk and made a bacteriological examination of them. The process used is **perfectly harmless**, no foreign substance is added, and the **nutritive value of the milk is not in the slightest degree impaired**, while the objectionable sediment, which exists to a greater or lesser degree in all milk, is altogether eliminated. The keeping properties of the milk are greatly increased by the process of filtering and sterilization. Coupled as it is with the periodic medical inspection of your employees, and the carefully enforced veterinary examination of your dairy cattle, **I consider that your system of dairy supply could hardly be improved upon in point of efficiency and safety.**

"EDMOND J. M'WEENEY, M.D., &c.

"*27th August*, 1894."

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—James Little, M.D., F.R.C.P.I.

General Secretary—W. Thomson, F.R.C.S.I.

SECTION OF SURGERY.

President—Thornley Stoker, President of the Royal College of Surgeons of Ireland.

Sectional Secretary—Kendal Franks, F.R.C.S.I.

Friday, December 7, 1894.

The President in the Chair.

Appendicectomy.

Mr. Myles read his paper on Appendicectomy, and gave details of two cases.

The first was that of a soldier, aged twenty-eight, who had been suffering from repeated attacks of appendicitis during the previous eight months; a small swelling had formed above Poupart's ligament in the right iliac fossa, and Mr. Myles cut down on this and found a thickened, curved, and adherent appendix, covered with a blanket of adherent omentum. The latter was divided between double ligatures and the appendix removed by the circular flap method. The patient made an uneventful recovery.

The second case occurred in a gentleman, aged twenty-seven, of remarkably fine physique. He had suffered from repeated attacks of pain, vomiting, &c., and had ultimately developed a swelling in the right iliac fossa. He refused operation at first, and when subsequently, owing to inability to practice his profession from repeated attacks of pain, he

consented to be operated on, the swelling had completely disappeared, but the localised tenderness was very marked. The operation was performed in the Private Hospital, Charlemont-street, and the cause of the pain was found in a number of flat, sharp-edged bodies, calcareous in character, lodged in a very long appendix. The appendix was removed as before, but in addition the stump was invaginated into the cæcum and the edges of the depression brought together with a few Lembert sutures. The result of the operation was a complete success. The sutures were removed on the 12th day, and on the 15th day the patient left the hospital. Since then he has led a very active life, is quite free from pain, and has gained over a stone in weight.

Mr. Myles discussed at some length the questions of diagnosis, time for operation, and the treatment of the parietal wound, so as to obviate the dangers of a ventral hernia occurring at the seat of operation.

The President said that accuracy of diagnosis between typhlitis and perityphlitis was extremely difficult. When a diagnosis of appendicitis can be made, he agreed with Mr. Myles as to the propriety of early operation. He had lately seen a case in which, owing to neglect, a pericæcal abscess had formed, which had opened into the patient's bladder. Fortunately the case got well without having to open the peritoneum. With regard to suturing the abdominal wall, he also thought with Mr. Myles that it should be sutured in layers. He thought that the method of opening the abdominal wall by a flap was the best. Ventral hernia was then practically impossible.

Mr. M'Ardle said that an appendicitis which may be very simple to-day may be very serious to-morrow. The moment he knew acute appendicitis was present he would operate. With regard to the method of dealing with the appendix, he considered that there was no need of ligaturing the mucous membrane. If the peritoneum is sutured over the retracted mucous membrane, all has been done that is necessary. He followed Mr. Smith in making two oblique incisions through the serous membrane, peeling it back and amputating the central portion, consisting of mucous and submucous tissue and then uniting the serous coat by sutures. He agreed with Mr. Myles as to the suture of the parietal wound in layers. He did not think that the continuous suture was the best. He disagreed with the President about the flap-method. He thought that no skin flap would have any influence in preventing a hernia if the deeper part does not unite early. He thought that the practice of applying clip forceps to the peritoneum was a bad one, and certainly that the peritoneum should not be drawn by them into the abdominal wound, as it, caused protrusion of it which prevented the part uniting, and so caused ventral hernia.

Mr. Tobin thought that gouty inflammation occurring in the neighbourhood of the appendix was very liable to be mistaken for appendicitis.

Where the symptoms pass away by adopting anti-gouty remedies, he thought that probably the inflammation did not start in the appendix.

Mr. A. J. Smith still adhered to the old method of taking in the entire abdominal wall by interrupted sutures, but is careful to include the aponeurosis, which generally retracts behind the skin and peritoneum in the suture. If he does so he finds that ventral hernia does not occur.

Mr. Croly thought that there was great difficulty in the diagnosis between perityphlitis and appendicitis. He mentioned a case which he had been called in to see. From the extreme dislike the patient had to his touching him he considered that suppuration was present, and that it had extended into the abdominal wall. He had no doubt that the inflammation arose from the cæcum. He operated, but before reaching the peritoneum pus came and the case subsequently got well. In another case which he saw there was difficulty in making out whether the patient had typhoid fever or inflammation round the cæcum. In the end an abscess formed which he removed by means of a trocar and cannula.

Dr. Parsons thought that it was not merely a matter of surgical interest. He considered that, even when a person was satisfied as to the diagnosis of appendicitis, still an operation was not always advisable, as 90 per cent. of the cases of appendicitis got well when treated medically by absolute rest and regulation of the diet. He thought that surgical interference was advisable in any of the three following cases—(1) in cases of recurrent attacks; (2) when there was a local formation of pus; (3) if there was reason to believe that perforation had occurred.

Sir W. Stokes thought that the opinion that abdominal pain in the region of the appendix, together with rise of temperature, justified a person opening the abdomen and excising the appendix, an exceedingly dangerous one. With reference to the closing of the abdominal wound he thought that one of the most important things was to fix similar tissues together, and that this could only be done by relays of deep sutures.

Mr. Myles, in replying, did not agree with Mr. M'Ardle about the time the operation should be performed. He thought that when a person was suffering from acute peritonitis that it was a very dangerous time to operate.

Adenoid Vegetations in the Naso-pharynx.

Mr. Kendal Franks read a paper on "Adenoid Vegetations in the Naso-pharynx." After giving a short *résumé* of the history of this condition, he described the usual symptoms which indicated the presence of these growths, and drew attention to the numerous reflex symptoms which were liable to be attributed to other causes, but which disappeared when the naso-pharynx was cleared. These adenoid vegetations were very frequently associated with hypertrophied tonsils, and with enlargement of the pharyngeal follicles. In cases where these growths gave

rise to troublesome symptoms, the only treatment for them was their removal. The most important point was to remove all the growths thoroughly. This he did not consider could be effectually done unless the patient were placed under the influence of chloroform. Nitrous oxide was not sufficient. He always adopted Rose's position, pushed the anæsthetic to the abolition of the faucial reflexes, scraped the growths away with Gottstein's curette, and plugged the post-nasal space with pledgets of cotton wool dipped in tannic acid. These pledgets were removed in a few moments whilst the patient was still under the chloroform, and all hæmorrhage was found to have stopped. He advised the removal of the tonsils, if enlarged, at the same time, and preferred Luer's guillotine to Mackenzie's. He, however, had the prongs removed from the guillotine and instead seized the tonsils with a forceps, which he exhibited, which drew the tonsil out of its bed previous to its division by the guillotine. He considered that there were few operations which gave such good results. He condemned the use of the artificial finger nail, and did not consider that the ordinary nail was sufficient for the purpose.

The President thought that post-nasal growths were just as common among the better class of society as among the poorer. He considered that they were within the compass of every practising surgeon and did not alone belong to a throat specialist. He entirely agreed with the Secretary on the necessity of performing the operation, and disbelieved in any other treatment. He thought Mackenzie's guillotine an excellent instrument and had never injured the pillars of the fauces when using it. Speaking of anæsthetics he considered that there was a necessity for complete anæsthesia, but that a great mortality attended the use of chloroform in this operation. He considered that the remedy for that was Rose's position, with the head hanging over the end of the table, and which was adopted by nearly every surgeon of experience.

Mr. Woods said, with regard to the origin of post-nasal adenoids, that there was a tendency for adenoid tissue to develop in young people. In two cases of his he had found chronic laryngitis had been caused by them, as the air had not been properly warmed by going through the nose. He thought that Lowenberg's forceps had the disadvantage of being rather tedious and requiring two or three doses of the anæsthetic. Latterly he has used a modification of Gottstein's curette. He did not agree with Mr. Franks that the duration of the anæsthesia caused by laughing gas was not long enough. Still he himself preferred chloroform. His plan of operating was to have the chloroform administered till the cornea was anæsthetic, then to force open the mouth and put in a self-retaining gag. He then forced a piece of sponge on a forceps through the nostrils into the pharynx. The use of this was to open the nose, which, owing to long disease, might not be large enough to admit

the air. He never found it necessary to plug the posterior nares. The bleeding, which is at first severe, stops in a few seconds and does not recur. He allows his patients up on the day following the operation, and discharges them on the third day. He had relapses in two cases, which he does not think were due to want of thorough scraping away of the growths. He never saw any good result follow from medical treatment.

Mr. Doyle thought that post-nasal adenoids were accountable for a great many maladies. In operating he adopts Rose's position, and uses a curette placed more at right angles and not so flexible as that used by the Secretary.

Surgeon-Major Daly mentioned a case where post-nasal adenoids had been mistaken for worms.

Mr. Kendal Franks, replying, had never found it necessary to dilate the nose. When he plugged the posterior nares he always removed the plugs within half a minute to a minute before the patient recovered from the anæsthetic. He considered that it helps to check the hæmorrhage especially as he put tannic acid on the plugs. He does not discharge his patients for a week after the operation. He objected to nitrous oxide gas not only on account of the short time of anæsthesia which it gives, but also because it causes a good deal of jactitation.

The Section then adjourned.

TOLYPYINE.

The researches of A. Anjeszky (*Pesth Med. Chir. Pr.*) on antipyretics demonstrate that a gramme of tolypyine every two hours causes a fall of temperature of 0·5° to 0·8° Cent. The antipyretic action of tolypyine is certain and well-marked. According to the intensity of the fever the patients received from 1 to 4 grammes of tolypyine—a gramme every hour. The temperature was taken half an hour after the first dose, and afterwards every hour. In two hours the fall of temperature ordinarily was from 1° to 5° Cent. In moderate fevers 1 or 2 grammes sufficed to maintain apyrexia for 7 or 8 hours. In marked pyrexia it is necessary to give 3 or 4 grammes of tolypyine, but the effect is an apyrexial condition lasting from 10 to 15 hours. In one case 3 grammes of tolypyine given in the height of the fever caused a fall of temperature of from 40° Cent. to 36·8° Cent., and the patient rested in an apyrexial condition for 14 hours. It was not until 20 hours afterwards that the temperature again attained 40° Cent. In case of tubercle of the summits of the lung a dose of tolypyine produced a subnormal temperature (34° Cent.). Profuse sweating results from the use of the drug. As a rule it is well borne by patients, producing no digestive trouble, though two cases of vomiting are noted, and in one case it caused an attack of urticaria. It was found to have no effect on rheumatism or neuralgia.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F. R. Met. Soc.; Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, December 29, 1894.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Dec 8.	Dec. 15.	Dec. 22.	Dec. 29.		Dec. 8.	Dec. 15.	Dec. 22.	Dec. 29.
Armagh -	28·0	21·0	14·0	28·0	Limerick -	26·7	23·9	22·5	12·6
Belfast -	20·7	25·8	26·7	22·1	Lisburn -	17·0	17·0	42·6	25·7
Cork -	22·8	29·8	29·1	19·4	Londonderry	20·4	14·1	26·7	12·6
Drogheda	30·7	8·8	26·4	39·5	Lurgan -	27·4	54·7	45·6	18·2
Dublin -	24·9	26·8	25·1	24·9	Newry -	16·1	16·1	16·1	20·1
Dundalk -	4·2	12·6	0·0	4·2	Sligo -	30·5	15·2	35·5	25·4
Galway -	11·3	7·6	7·6	26·4	Waterford -	7·5	10·0	30·0	30·0
Kilkenny	14·2	18·9	28·3	14·2	Wexford -	13·5	4·5	9·0	18·1

In the week ending Saturday, December 8, 1894, the mortality in thirty-three large English towns, including London (in which the rate was 19·4), was equal to an average annual death-rate of 20·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·1 per 1,000. In Glasgow the rate was 23·9, and in Edinburgh it was 18·6.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 22·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·1 per 1,000, the rates varying from 0·0 in eight of the districts to 5·6 in Limerick—the 19 deaths from all causes registered in that district comprising 1 from scarlatina, 2 from whooping-cough, and 1 from diarrhœa. Among the 107 deaths from all causes

registered in Belfast are 2 from measles, 3 from whooping-cough, 2 from diphtheria, 2 from enteric fever, and 2 from diarrhœa. The 33 deaths in Cork comprise 1 from scarlatina and 1 from whooping-cough. The 3 deaths in Waterford comprise 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 204—96 boys and 108 girls; and the registered deaths to 170—76 males and 94 females.

The deaths, which are 32 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·4 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 24·9 per 1,000. During the first forty-nine weeks of the current year the death-rate averaged 24·7, and was 2·6 under the mean rate in the corresponding period of the ten years 1884–1893.

The number of deaths from zymotic diseases registered was 22, being 11 over the low number for the preceding week, but 2 below the average for the corresponding week of the last ten years. The 22 deaths comprise 6 from small-pox, 1 from scarlet fever (scarlatina), 6 from influenza and its complications, 1 from whooping-cough, 1 from diphtheria, 2 from enteric fever, 3 from diarrhœa, and 1 from erysipelas.

The deaths from small-pox are those of a boy, 4 girls, and a woman, none of whom had been vaccinated.

Thiry-one cases of small-pox were admitted to hospital, being 6 under the admissions for the preceding week: 35 small-pox patients were discharged, 6 died, and 91 remained under treatment on Saturday, being 10 under the number in hospital at the close of the preceding week.

Nineteen cases of enteric fever were admitted to hospital, being 5 over the number admitted in each of the two weeks preceding: 8 enteric fever patients were discharged, 1 died, and 90 remained under treatment on Saturday, being 10 over the number in hospital on that day week.

The hospital admissions included, also, 9 cases of scarlatina, against 12 in the preceding week and 24 in the week ended Saturday, November 24: 5 patients were discharged, and 99 remained under treatment on Saturday, being 4 over the number in hospital at the close of the preceding week.

The number of deaths from diseases of the respiratory system registered was 36, being 8 over the number for the preceding week, but 13 under the average for the 49th week of the last ten years. The 36 deaths comprise 24 from bronchitis, 8 from pneumonia or inflammation of the lungs, and 2 from pleurisy.

In the week ending Saturday, December 15, the mortality in thirty-three large English towns, including London (in which the rate was 18·6), was equal to an average annual death-rate of 19·7 per 1,000

persons living. The average rate for eight principal towns of Scotland was 22·5 per 1,000. In Glasgow the rate was 24·7, and in Edinburgh it was 21·1.

The average annual death-rate in the sixteen principal town districts of Ireland was 24·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·0 per 1,000, the rates varying from 0·0 in eight of the districts to 14·0 in Armagh—the 3 deaths from all causes registered in that district comprising 2 from whooping-cough. Among the 133 deaths from all causes registered in Belfast are 1 from measles, 1 from scarlatina, 1 from whooping-cough, 1 from diphtheria, 4 from enteric fever, and 1 from diarrhœa. The 43 deaths in Cork comprise 1 from scarlatina and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 172—84 boys and 88 girls; and the registered deaths to 182—82 males and 100 females.

The deaths, which are 22 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 27·1 in every 1,000 of the population. Omitting the deaths (numbering 2) of persons admitted into public institutions from localities outside the district, the rate was 26·8 per 1,000. During the first fifty weeks of the current year the death-rate averaged 24·8, and was 2·6 under the mean rate in the corresponding period of the ten years 1884–1893.

The number of deaths from zymotic diseases registered was 22, being equal to the number registered during the preceding week, but 2 below the average for the corresponding week of the last ten years. The 22 deaths comprise 5 from small-pox, 1 from measles, 1 from scarlet fever (scarlatina), 3 from influenza and its complications, 4 from whooping-cough, 4 from enteric fever, and 3 from diarrhœa.

The deaths from small-pox are those of 1 man and 2 women vaccinated, and of 2 boys who had not been vaccinated.

The number of cases of small-pox admitted to hospital was 86, being 55 over the admissions for the preceding week: 56 small-pox patients were discharged, 5 died, and 116 remained under treatment on Saturday, being 25 over the number in hospital on Saturday, December 8.

Thirteen cases of enteric fever were admitted to hospital, being 6 under the admissions for the preceding week. Seventeen enteric fever patients were discharged, 2 died, and 84 remained under treatment on Saturday, being 6 under the number in hospital at the close of the preceding week.

The hospital admissions included, also, 18 cases of scarlatina, against 9 for the preceding week: 22 patients were discharged, and 95 remained under treatment on Saturday, being 4 under the number in hospital at the close of the preceding week.

Deaths from diseases of the respiratory system, which had risen from 28 for the week ended December 1 to 36 for the following week, further rose to 48, but this number is 7 below the average for the 50th week of the last ten years. The 48 deaths comprise 30 from bronchitis and 12 from pneumonia or inflammation of the lungs.

In the week ending Saturday, December 22, the mortality in thirty-three large English towns, including London (in which the rate was 17·3), was equal to an average annual death-rate of 18·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·7 per 1,000. In Glasgow the rate was 23·3, and in Edinburgh it was 20·8.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 25·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·8 per 1,000, the rates varying from 0·0 in nine of the districts to 9·1 in Lurgan—the 10 deaths from all causes registered in that district comprising 2 from measles. Among the 138 deaths from all causes registered in Belfast are 1 from measles, 8 from whooping-cough, 1 from diphtheria, 2 from simple continued fever, 3 from enteric fever, and 3 from diarrhœa. The 42 deaths in Cork comprise 1 from scarlatina and 1 from whooping-cough. Of the 16 deaths in Limerick 2 were from whooping-cough. The 17 deaths in Londonderry comprise 1 from diphtheria and 2 from whooping-cough. The Registrar for Lisburn District remarks—"Three cases of scarlatina from one house sent to hospital."

In the Dublin Registration District the registered births amounted to 155—86 boys and 69 girls; and the registered deaths to 178—94 males and 84 females.

The deaths, which are 20 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 26·5 in every 1,000 of the population. Omitting the deaths (numbering 10) of persons admitted into public institutions from localities outside the district, the rate was 25·1 per 1,000. During the first fifty-one weeks of the current year the death-rate averaged 24·8, and was 2·6 under the mean rate in the corresponding period of the ten years 1884–1893.

Twenty-six deaths from zymotic diseases were registered, being 4 over the number for the preceding week, and 2 above the average for the corresponding week of the last ten years. The 26 deaths comprise 6 from small-pox, 1 from scarlet fever (scarlatina), 1 from influenza, 5 from whooping-cough, 7 from enteric fever, 3 from diarrhœa and 2 from erysipelas.

The deaths from small-pox are those of a man and 2 women vaccinated, and of a man and 2 children who had not been vaccinated.

The number of cases of small-pox admitted to hospital was 113, being 27 over the admissions in the preceding week: 91 small-pox patients were discharged, 7 died, and 131 remained under treatment on Saturday, being 15 over the number in hospital on Saturday, December 15.

Only 10 cases of enteric fever were admitted to hospital, being 3 under the admissions in the preceding week, and 9 below the number in the week ended December 8. Nineteen enteric fever patients were discharged, 4 died, and 71 remained under treatment on Saturday, being 13 under the number in hospital at the close of the preceding week.

The hospital admissions included, also, 26 cases of scarlatina, being an increase of 8 as compared with the admissions for the preceding week: 40 patients were discharged, 2 died, and 79 remained under treatment on Saturday, being 16 over the number in hospital at the close of the preceding week.

Deaths from diseases of the respiratory system, which had risen from 36 for the week ended December 8 to 48 for the following week, fell to 42, or 2 below the average for the 51st week of the last ten years. The 42 deaths comprise 28 from bronchitis and 10 from pneumonia or inflammation of the lungs.

In the week ending Saturday, December 29, the mortality in thirty-three large English towns, including London (in which the rate was 17·2), was equal to an average annual death-rate of 18·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·1 per 1,000. In Glasgow the rate was 24·5, and in Edinburgh it was 17·2.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·3 per 1,000 of the population.

The deaths from the principal zymotic diseases registered in the sixteen districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in twelve of the districts to 9·1 in Lurgan—the 4 deaths from all causes registered in that district comprising 2 more from measles. Among the 114 deaths from all causes registered in Belfast are 2 from scarlatina, 2 from whooping-cough, 1 from enteric fever, and 3 from diarrhœa.

In the Dublin Registration District the registered births amounted to 133—77 boys and 56 girls; and the registered deaths to 170—80 males and 90 females.

The deaths, which are 53 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·4 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 24·9 per 1,000. During the fifty-two weeks ending with Saturday, December 29, the death-rate averaged 24·8, and

was 2·7 under the mean rate in the corresponding period of the ten years 1884–1893.

Twenty-seven deaths from zymotic diseases were registered, being 1 over the number for the preceding week and also 1 over the average for the corresponding week of the last ten years. The 27 deaths comprise 10 from small-pox, 2 from scarlet fever (scarlatina), 2 from influenza and its complications, 3 from whooping-cough, 3 from enteric fever, 3 from diarrhœa, and 2 from erysipelas.

The deaths from small-pox are those of 3 persons vaccinated, of 6 unvaccinated, and of one person in whose case no statement was made as to vaccination.

Thirty-two cases of small-pox were admitted to hospital, being 81 under the admissions for the preceding week: 14 small-pox patients were discharged, 8 died, and 141 remained under treatment on Saturday, being 10 over the number in hospital on Saturday, December 22.

Since the appearance of this disease in July last the deaths from it within the Dublin Registration District have, for each week from the 21st July to the 29th December, been respectively 1, 0, 1, 1, 3, 6, 0, 1, 2, 0, 2, 4, 2, 2, 4, 1, 4, 3, 1, 3, 6, 5, 6, and 10, making a total of 68 deaths, all except one of which occurred in hospital. The admissions to hospital during the same period have been 0, 4, 9, 26, 37, 14, 16, 16, 12, 13, 19, 8, 8, 28, 15, 28, 37, 24, 18, 37, 31, 86, 113, and 32 weekly.

The number of cases of enteric fever admitted to hospital was 11, being 1 over the number for the preceding week, but 2 under the admissions for the week ended December 15: 13 enteric fever patients were discharged, 2 died, and 67 remained under treatment on Saturday, being 4 under the number in hospital at the close of the preceding week.

The hospital admissions for the week included, also, 7 cases of scarlatina, being a decrease of 19 as compared with the admissions for the preceding week: 7 patients were discharged, and 79 remained under treatment on Saturday, being equal to the number in hospital on Saturday, December 22.

Deaths from diseases of the respiratory system amounted to 37, being 21 below the average for the corresponding week of the ten years 1884–1893, and 5 under the number for the preceding week. The 37 deaths comprise 22 from bronchitis and 13 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat 53° 20′ *N., Long.* 6° 15′ *W., for the Month of December*, 1894.

Mean Height of Barometer, - - -	29·980 inches.
Maximal Height of Barometer (on 27th, at 4 p.m.), -	30·805 „
Minimal Height of Barometer (on 21st, at 11 30 p.m.),	29·144 „
Mean Dry-bulb Temperature, - - -	43·0°.
Mean Wet-bulb Temperature, - - -	41·3°.
Mean Dew-point Temperature, - - -	39·3°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·244 inch.
Mean Humidity, - - - - -	87·2 per cent.
Highest Temperature in Shade (on 13th), - -	56·8°.
Lowest Temperature in Shade (on 31st), - -	27·9°.
Lowest Temperature on Grass (Radiation) (on 31st),	22·0°.
Mean Amount of Cloud, - - - -	62·5 per cent.
Rainfall (on 18 days), - - - -	1·511 inches.
Greatest Daily Rainfall (on 23rd), - -	·217 inch.
General Directions of Wind, - - -	W., S.W.

Remarks.

The earlier part of the month was characterised by anticyclonic conditions, and was quiet, chiefly fine, with a good deal of fog. From the 9th onward, the distribution of atmospheric pressure was cyclonic. Gradients were, however, at first slight. Afterwards several depressions of remarkable depth and intensity passed across North-Western Europe—the systems observed on the 22nd and 29th being especially noticeable for the suddenness of their approach, the tempests which accompanied them, and the havoc which they wrought. As in 1893, the month closed with a cold spell, northerly gales bringing falls of sleet, hail and snow to most parts of Western Europe.

In Dublin the arithmetical mean temperature (43·9°) was decidedly above the average (41·3°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 43·0°. In the twenty-nine years ending with 1893, December was coldest in 1878 (M. T. = 32·8°), and in 1874 (M. T. = 36·8°), and warmest in 1865 (M. T. = 46·2°). In 1886, the M. T. was as low as 37·9°; in the year 1879 (the "cold year") it was also 37·9°. In 1887, the M.T. was 39·9°; in 1888, 43·6°; in 1889, 43·8°; in 1890, 39·2°; in 1891, 43·0°; in 1892, 39·6°; and in 1893, 43·5°.

The mean height of the barometer was 29·980 inches, or 0·105 inch above the corrected average value for December—namely, 29·875 inches. The mercury rose to 30·805 inches at 4 p.m. of the 27th, and fell to 29·144 inches at 11 30 p.m. of the 21st. The observed range of atmo-

spheric pressure was, therefore, 1·661 inches—that is, a little less than one inch and seven-tenths.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 43·0°, or 3·8° below the value for November, and 6·2° below that for October, 1894. Using the formula, *Mean Temp.* = *Min.* × (*max.* — *min.* × ·52), the value was 44·0°, or 2·5° above the average mean temperature for December, calculated in the same way, in the twenty-five years, 1865-89, inclusive (41·5°). The arithmetical mean of the maximal and minimal readings was 43·9°, compared with a twenty-five years' average of 41·3°. On the 13th the thermometer in the screen rose to 56·8°—wind, S.W.; on the 31st the temperature fell to 27·9°—wind, N.W. The minimum on the grass was 22·0°, also on the 31st. There were only 3 days of frost in the screen and 15 days of frost on the grass.

The rainfall was 1·511 inches, distributed over as many as 18 days. The average rainfall for December in the twenty-five years, 1865–89, was 2·404 inches, and the average number of rainy days was 16·9. The rainfall, therefore, was considerably below, while the rainy days were above, the average. In 1876 the rainfall in December was very large—7·566 inches on 22 days. In 1872, 4·932 inches fell on as many as 24 days; and in 1868 (which was otherwise a fine and dry year), 4·749 inches fell on as many 27 days. On the other hand, in 1867, only ·771 inch was measured on 13 days; and in 1871 only ·797 inch on 15 days. In 1885, only ·742 inch of rain was measured on but 10 days; but in 1886 the rainfall was 3·348 inches, distributed over as many as 21 days. In 1887 (the "dry year,") the rainfall was 1·223 inches on 19 days; in 1888, 2·911 inches on 17 days; in 1889, 1·554 inches on 15 days; in 1890, 1·856 inches on 11 days; in 1891, 3·299 inches on 21 days; in 1892, only ·795 inch on 10 days, and in 1893, 2·482 inches on 19 days.

Lunar halos appeared on the 6th, 8th, and 10th; solar halos on the 6th and 8th. High winds were noted on 12 days, and attained the force of a gale on 8 occasions—the 9th, 13th, 14th, 18th, 21st, 22nd, 28th, and 29th. The atmosphere was more or less foggy in Dublin on the 1st, 3rd, 4th, 5th, 6th, 8th, 10th, 11th and 23rd. Snow or sleet fell in Dublin on the 29th and 30th. Hail fell on the 14th, 28th, 29th, and 30th. Lightning occurred on the 30th. Faint aurora was seen on the 22nd.

Saturday, the 1st, was a fine quiet day—at first cloudy, afterwards foggy.

Although not so settled as in the previous week, the weather during the week ended Saturday, the 8th, was favourable and seasonable. At first an anticyclone still stretched westwards across the British Islands from Germany, but the barometer was, all the same, falling steadily. Light to moderate or fresh S.E. winds prevailed in Ireland, where the weather was fine and dry. Sunday was a brilliant day in Dublin—a

heavy dew fell in the evening. Monday broke overcast, but the sky afterwards cleared and fog and frost occurred at night. On Tuesday a shallow, irregular depression (29·70 inches and less) lay over Brittany and the English Channel. It caused dull, misty cold weather, but scarcely any rain fell. On this day the maximal temperature in Dublin was only 38·8°. Wednesday was dull and foggy to fair. On Thursday, much cirrus overspread the sky, causing solar and lunar halos, and the barometer fell as a more decided depression approached from the S.W. At 8 a.m., of Friday the barometer was down to 29·48 inches at Malin Head, and rain was falling in many parts of England and Ireland. By Saturday morning this disturbance had reached the Shetlands and was filling up, while a long trough of low pressure existed over the North Sea. In Ireland the weather was cold, but fine. In England and Scotland, it was taking up after a somewhat heavy rainfall. A solar halo and a lunar halo were again visible on this day. In Dublin the mean height of the barometer was 29·930 inches, pressure ranging from 30·333 inches at 9 a.m. of Sunday (wind S.E.) to 29·608 inches at 9 a.m. of Friday (wind S.W.). The corrected mean temperature was 40·2°; the mean dry bulb readings at 9 a.m. and 9 p.m. were 39·0°. On Friday the screened thermometers rose to 51·4°, having fallen to 28·6° on Tuesday. There was again no registrable rainfall—a sprinkling on Thursday yielding only ·003 inch. The prevailing wind was westerly.

Throughout the week ended Saturday, the 15th, a cyclonic distribution of atmospheric pressure and the south-westerly type of weather held over the British Islands and all but the south-eastern part of Scandinavia. Over Central Europe the barometer until Friday stood high within the limits of an anticyclone, and the weather was calm, cold, frosty and at times foggy—at Munich the 8 a.m. temperatures were—31°, 28°, 21°, 17°, 16°, 22° and 44°. The corresponding values at Valentia Island (Kerry) were—51°, 54°, 51°, 52°, 55°, 51° and 48°. During the earlier part of the week a succession of depressions skirted the western shores of Ireland and Scotland, causing squally S. and S.W. winds, much cloud, showers, and high temperatures. On Thursday morning a deep depression struck the N.W. of Scotland, where the barometer read only 29·19 inches (at Stornoway in the Hebrides) while it stood nearly an inch and a quarter higher in the S. of Germany (30·43 inches at Munich). Fresh to strong S.S.W. gales were felt in Ireland, Scotland, and West of Norway. Next morning the barometer read only 28·98 inches at Haparanda on the Gulf of Bothnia, having been down to 28·76 inches at Bodö in Norway the previous evening. On Friday afternoon heavy showers fell, followed by hail squalls at 10 p.m. Saturday was a bright, cold day; but squalls and rain again set in during the course of the evening. In Dublin the mean height of the barometer was 29·876 inches, pressure ranging between 29·563 inches at 6 p.m. of Sunday (wind S.S.W.), and 30·168

inches at 5 p.m. of Saturday (wind W.). The corrected mean temperature was 48·8°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 48·9°. On Sunday the thermometers fell to 34·9° in the screen; on Thursday they rose to 56·8°. Rain was measured daily, the total amount being ·564 inch, of which ·203 inch fell on Friday. The prevailing winds were south-westerly. A very heavy fall of rain occurred over the S.E. of England on Friday.

Atmospheric pressure was in a very unstable condition over Europe at large throughout the week ended Saturday, the 22nd, and the weather was therefore changeable and unsettled. On Sunday morning the barometer ranged from 28·90 inches at Bodö, in the N.W. of Norway, to 30·43 inches at Lyons. In the British Isles moderating north-westerly winds prevailed, and the weather was improving. Soon, however, a new depression appeared over the N. of Scotland, and this developed into a cyclonic disturbance, in the centre of which pressure decreased to less than 28·70 inches on Tuesday evening between the Shetlands and the S.W. of Norway. Gales, from S.W. to N.W., with passing showers of rain and hail and, in some districts, lightning, were reported. On Wednesday night this disturbance travelled south-eastwards to Germany and filled up. On Friday another serious reduction of pressure occurred over the Norwegian Sea and North Atlantic, and towards evening a tempest of wind and rain, with very high temperatures, was felt in Ireland and afterwards extended to all parts of Great Britain. At York the barometer fell from 29·99 inches at 8 a.m. of Friday to 28·72 inches at 8 a.m. of Saturday. From 6 p.m. of Friday to 8 a.m. of Saturday the decrease of pressure at that station amounted to 1·11 inches. At Leith the very low reading of 28·119 inches was recorded early on Saturday morning. As this system passed away, the wind drew into N.W., the air became exceedingly dry and crisp—the relative humidity falling to 60 per cent. in Dublin on Saturday, and temperature fell fast. In Dublin, the mean atmospheric pressure of the week was 29·832 inches. The barometer rose to 30·238 inches about 3 p.m. of Thursday (wind W.) and fell to 29·144 inches at 11·30 p.m. of Friday (wind S.S.W.). The corrected mean temperature was 46·1°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 44·2°. On Friday and also on Saturday the thermometers in the screen rose to 53·7°, having fallen to 37·0° on Thursday. The prevalent winds were W. and W.S.W. The rainfall was ·414 inch on four days—·187 inch being measured on Monday, and ·159 inch on Friday. Faint aurora was seen on Saturday night.

During the week ended Saturday, the 29th, at first, dull, damp, and mild, the weather afterwards became stormy and colder, with bright intervals. Atmospheric pressure remained in most unstable equilibrium all over Europe, and strange contrasts of anticyclonic and cyclonic conditions presented themselves day after day. Speaking in general terms,

the barometer ruled low in the far North, high in the central European zone and over the Atlantic to the southwest of the British Islands. On Thursday, at noon, the unusual reading of 30·93 inches was recorded at Valentia Island (Kerry). At 8 a.m. of the same day 28·78 inches was the pressure at Haparanda, on the Gulf of Bothnia. Sunday proved wet in Ireland owing to the passage eastwards across this country of a V.-shaped depression, which filled up subsequently over the North Sea. As this system dispersed, very gloomy, damp, mild weather prevailed. On Christmas Day (Tuesday), the thermometer rose to 55° at Wick, 54° at Nairn and Prawle Point, 53° at Aberdeen, Dublin, Scilly, and Jersey, 52° at many stations, and 50° in London. So warm and dull a Christmas had not occurred for many years. On Wednesday a large depression spread south-eastwards across Scandinavia, causing severe gales in that region, and strong N.W. winds in Scotland. On Thursday the barometer was exceptionally high in the W. of Ireland (above 30·9 inches), but at night pressure gave way quickly as a new storm-system advanced from the westward. A hard W.S.W to N.W. gale ensued, followed by a brisk fall of temperature and showers of cold rain, hail, sleet or snow. In Dublin the mean height of the barometer was 30·243 inches, pressure varying between 30·805 inches, at 4 p.m. of Thursday (wind W.), and 29·505 inches, at 9 a.m. of Saturday (wind N.W. by W.). The reading of the barometer at 4 p.m. of Thursday was the highest recorded in Dublin since January 14, 1891, at 9 p.m. of which day the reading was 30·875 inches. The corrected mean temperature was 44·7°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 43·7°. On Tuesday the screened thermometers rose to 52·6°; on Saturday they fell to 35·3°. The prevailing wind was westerly. Rainfall measured ·489 inch, ·217 inch being recorded on Sunday. Hail fell on Friday and Saturday; sleet, on Saturday.

The last two days of the month were very cold, and snow lay on the ground to the depth of an inch in and around Dublin. Snow and hail fell on the afternoon of Sunday, the 30th, and lightning was seen in the evening.

The rainfall in Dublin during the year ending December 31st amounted to 29·261 inches on 209 days, compared with only 20·493 inches on 174 days in 1893, 25·644 inches on 196 days in 1892, 27·820 inches on 184 days in 1891, 27·562 inches on 200 days in 1890, 27·272 inches on 193 days in 1889, 28·679 inches on 190 days in 1888, 16·601 inches on 160 days in 1887, and a 25 years' average of 27·696 inches on 194·3 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in December, 1894, was 3·060 inches distributed over 16 days. Of this quantity ·580 inch fell on the 9th, and ·490 inch on the 11th. From January 1st, to December 31st, 1894, rain fell at Knockdolian, on 184 days, and to

the total amount of 38·776 inches. The corresponding figures for 1893 were 22·526 inches on 170 days.

The rainfall at Cloneevin, Killiney, Co. Dublin, during December, 1894, was 1·68 inches on 16 days, compared with a nine years' average (1885–93) of 2·108 inches on 15·6 days. The maximum fall in 24 hours was ·40 inch on the 9th. Mr. Robert O'Brien Furlong, M.A., Univ. Dub., reports that the total fall for 1894 at Cloneevin was 32·6 4 inches on 196 days. This was 7·95 inches in excess of the 9 years average—viz., 24·69 inches, and is the highest recorded for 10 years—1885–94. The next highest annual fall was 32·42 inches in 1886. In 1894 rain (including snow) fell on 196 days, the average being 175 days. In 1886 rain fell on 195 days.

The greatest fall in 24 hours was 1·91 inches on October 23rd. The greatest fall hitherto recorded was 1·84 inches on November 10th, 1891.

The rainfall of October was phenomenal. During the first 16 days the fall was only ·13 inch on 3 days. From the 17th to the 31st rain fell every day except the 22nd.

Thunderstorms occurred on July 25 (12 30 a.m. to 3 a.m. on the 26th). Severe gales prevailed on December 21 (S.W. to N.W.) and October 24 (S.E. to S.W.).

Snow fell on 9 days—Jan. 5, 6, 27, 30 and 31; March 12 and 13; Dec. 29 and 30.

Rainfall in 1894,

At 40 Fitzwilliam-square, West, Dublin.

Rain Gauge:—Diameter of funnel, 8 in. Height of top—Above ground 1 ft. 4 in.; above sea level, 50 ft.

Month	Total Depth	Greatest Fall in 24 Hours		Number of Days on which ·005 or more fell
	Inches	Depth	Date	
January,	2·838	·334	12th	23
February,	1·903	·360	10th	16
March	1·287	·268	12th	14
April,	3·123	·561	13th	20
May,	3·558	1·330	15th	17
June,	1·652	·408	17th	19
July,	3·772	1·560	24th	21
August,	3·726	1·369	25th	18
September,	·442	·156	7th	8
October,	3·967	1·042	23rd	20
November,	1·482	·399	13th	15
December,	1·511	·217	23rd	18
Total,	29·261	—	—	209

The rainfall was 1·565 inches in excess of the average annual measurement of the twenty-five years, 1865–89, inclusive—viz., 27·696 inches.

It will be remembered that the rainfall in 1887 was very exceptionally small—16·601 inches, the only approach to this measurement in Dublin being in 1870, when only 20·859 inches fell, in 1884, when the measurement was 20·467 inches, and in 1893 with its rainfall of 20·493 inches In seven of the twenty-five years in question the rainfall was less than 26 inches, and in 1885 it was 26·614 inches.

The scanty rainfall in 1887 was in marked contrast to the abundant downpour in 1886, when 32·966 inches—or as nearly as possible double the fall of 1887—fell on 220 days. Only twice since these records com menced has the rainfall in Dublin exceeded that of 1886—namely, in 1872, when 35·566 inches fell on 238 days, and in 1880, when 34·512 inches were measured on, however, only 188 days.

In 1894, there were 209 rainy days, or days upon which not less than ·005 inch of rain (five-thousandths of an inch) was measured. This was considerably in excess of the average number of rainy days, which was 194·3 in the twenty-five years, 1865–89, inclusive. In 1868 and 1887—the warm dry years of recent times—the rainy days were only 160, and in 1870 they were only 145. In 1868, however, the rainfall amounted to 24·935 inches, or more than 8 inches above the measurement in 1887, and even in 1870, 20·859 inches were recorded.

The rainfall in 24 hours from 9 a.m. to 9 a.m. exceeded one inch on two occasions in 1892—viz., May 28th (2·056 inches) and August 16th (1·310 inches). On no occasion in 1893 did one inch of rain fall on a given day in Dublin, the maximal daily measurements were ·871 inch on July 12th, and ·821 inch on November 16th. In 1894, falls of upwards of an inch of rain in 24 hours were recorded on four occasions, viz., May 15th (1·330 inches); July 24th (1·560 inches); August 25th (1·369 inches); and October 23rd (1·042 inches).

Included in the 209 rainy days in 1894 are 16 on which snow or sleet fell, and 32 on which there was hail. In January hail was observed on 7 days, in February on 4 days, in March on 5 days, in April, June, and October on 2 days, in May on 3 days, in July, August, and September on one day, and on 4 days in December. Snow or sleet fell on 7 days in January, on 2 days in February, on 3 days in March, on 1 day in May and in October, and on 2 days in December. Thunder occurred on 11 occasions during the year—three times in May, six times in July and once in August and October. Lightning was also seen on three occasions in July, and once in January, February, September, November and December.

The rainfall was distributed as follows:—6·028 inches fell on 53 days in the first quarter, 8·333 inches on 56 days in the second, 7·940 inches

on 47 days in the third, and 6·960 inches on 53 days in the fourth and last quarter.

The rainfall in the first six months was 14·361 inches on 109 days—that is, not quite one half of the year's record. The rainfall exceeded 3 inches in April (3·123), May (3·558), July (3·772), August (3·726), and October (3·967). In September it was only ·442 inch on 8 days.

Of the 6·960 inches which fell in the fourth quarter of the year, 3·967 inches were measured in October on 20 days, 1·482 inches in November on 15 days, and 1·511 inches in December on 18 days.

Aurora borealis was observed on six occasions—namely, on February 23rd and 25th, March 30th, April 5th, November 23rd, and December 22nd. More or less fog prevailed on 64 occasions—3 in January, 8 in February, 10 in March, 8 in April, 3 in May and June, 5 in September, 9 in October, 6 in November, and 9 in December. High winds were noted on 131 days—21 in January, 17 in February, 12 in March, 5 in April, 11 in May, 8 in June, 7 in July, 13 in August, only 2 in September, 8 in October, 15 in November, and 12 in December. The high winds amounted to gales (force 7 or upwards according to the Beaufort scale) on 39 occasions—9 in January, 8 in February, 4 in March, 2 in April, 1 in May, June, and July, respectively; 2 in August, 1 in October, 2 in November, and 8 in December.

Abstract of Meteorological Observations taken at Dublin (40 Fitzwilliam-square, West) during the Year 1894.

MONTH	Abs. Max.	Date	Abs. Min.	Date	Mean Daily Max.	Mean Daily Min.	Rainfall	Rainy Days	Mean Height of Barometer	Highest Pressure	Date	Lowest Pressure	Date	Prevalent Winds
	°		°		°	°	Ins.		Ins.	Ins.		Ins.		
January -	54·7	11th	18·6	7th	46·0	36·0	2·838	23	29·718	30·619	3rd	29·140	31st	S.W., W.S.W, W.
February -	58·6	7th	31·6	1st	50·4	39·4	1·903	16	29·906	30·448	20th	28·867	11th	W., S.W.
March - -	63·6	29th	31·8	17th	52·7	38·0	1·287	14	29·896	30·434	23rd	29·096	13th	W., S.W., E.
April - -	62·7	8th	38·0	1st	55·6	44·3	3·123	20	29·801	30·427	30th	29·261	24th	S.
May - -	64·5	25th	33·0	21st	55·4	43·0	3·558	17	29·970	30·491	1st	29·543	9th & 10th	W., N.N.W., N.E.
June - -	72·8	30th	43·1	6th	63·8	50·2	1·652	19	29·992	30·368	29th	29·493	2nd	W., E.
July - -	75·7	1st	48·3	23rd	66·4	54·1	3·772	21	29·853	30·211	1st	29·309	11th	W., N.W., S.W., E.S.E.
August - -	67·9	8th	47·1	20th & 22nd	63·1	52·7	3·726	18	29·916	30·304	29th	29·432	15th	N.W., W.
September -	63·9	10th	39·8	28th	59·4	48·2	·442	8	30·213	30·509	30th	29·768	22nd & 23rd	N., E.N.E., E.
October - -	62·8	31st	36·0	22nd	55·0	44·4	3·967	20	29·881	30·454	1st	28·591	24th	E., S.E., W.
November -	61·6	1st	34·3	30th	52·9	42·7	1·482	15	29·850	30·591	30th	28·904	14th	W., S.W., S.S.W.
December -	56·8	13th	27·9	31st	48·7	39·0	1·511	18	29·980	30·805	27th	29·144	21st	W., S.W.
Extremes, Totals, and Means	° 75·7	July 1st	° 18·6	Jan. 7th	° 55·8	° 44·3	Ins. 29·261	Days 209	Ins. 29·915	Ins. 30·805	Dec. 27th	Ins. 28·591	Oct. 24th	W., S.W.
					50·1°									

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January 1, 1895.

PERISCOPE.

TRANSMISSION OF TYPHOID FEVER FROM MOTHER TO FŒTUS.

An interesting case demonstrating conclusively that typhoid bacilli may pass from the maternal to the fœtal circulation is reported by Janiszeswski (*Münch. Med. Woch.*, Sept. 18th, 1893). A woman, aged thirty-eight, gave birth, in the third week of a typical attack of enteric fever, to an eight months' child. The infant died in five days' time. At the necropsy there were hæmorrhages in the kidneys, and patches of consolidation in the lungs. The spleen was enlarged, but the intestine showed no change. Portions of the lungs, spleen, kidney, mesenteric glands, and intestine in the neighbourhood of the ileo-cæcal valve showed the presence of bacilli. These bacilli were proved both morphologically and by the usual cultivation experiments to be typhoid bacilli.—*Canadian Practitioner.*

SUICIDES IN FRANCE.

The Hospital quotes from the *Journal Officiel* the following figures, showing the increase of suicide in France. In 1890 the number was 8,410 :—

Years	Average Annual Suicides	Per 100,000 Inhabitants
1861-65	4,661	12
1866-70	4,990	13
1871-75	5,276	15
1876-80	6,259	17
1881-85	7,339	19
1886-90	8,226	21

COMMUNICABILITY OF LEPROSY.

In the *Medical Record* of December 2nd, 1893, Dr. Beaven Rake ("of London, England"), a member of the late Indian Leprosy Commission, publishes an elaborate paper on this subject, which should be studied by all who are interested in the disease of leprosy. His conclusions are summarised as follows :—1. Leprosy is probably due to a bacillus, and theoretically we must admit the possibility of its inoculation. 2. The experimental inoculation of leprosy in man or animals has never succeeded beyond the possibility of doubt. 3. It has not been proved that vaccination has conveyed leprosy. 4. While practical experience points to a possible communication of the disease from one person to another, the weight of evidence shows that this must be extremely rare, and under very exceptional conditions. 5. Leprosy has steadily decreased in many countries without any attempt at compulsory segregation, while in other places it has increased in spite of isolation of lepers. 6. The immigration of lepers into leprosy-free countries has not in recent times been followed

by any appreciable spread of the disease. 7. For practical purposes leprosy may be regarded as less dangerous to the community than tuberculosis, and as requiring no greater precautions than those taken against the spread of that disease.

OPERATIONS IN BALTIMORE.

The curious in surgical operations will be interested in the *Johns Hopkins Hospital Bulletin* for October, 1893. Dr. H. A. Kelly, Gynæcologist-in-Chief, in the course of a "hysteromyomectomy," mistook a ureter for an engorged vein, and divided it. He tied the lower end of the ureter close to its cut extremity, and made a longitudinal incision in its anterior wall, into which he stitched the upper end. The operations were perfectly successful. Dr. J. T. M. Finney reports three cases of removal of the Gasserian ganglion for severe neuralgia of the fifth nerve. Two of these were successful; one proved fatal. "From the autopsy report it is readily seen there was ample cause for death found in the pre-existing heart lesions, so the death can hardly be fairly laid to the operation *per se*, although undoubtedly precipitated by it."

HEALTH OF THE U. S. ARMY.

From an abstract of the Surgeon-General's Report on the health of the army of the United States, for the year ending 30th June, 1893 (prepared by the *Medical Record*), we extract some of the more important statistics. Strange to say, neither the total nor average strength is given. The health of the army was excellent. Admission rate per 1,000, 1,270·42; non-effective rate, 39·60; discharged for disability, 18·35; death-rate, 6·44; mortality from disease being 4·36. "The absolute number of deaths was 173, of which 56 were caused by violence, 20 by consumption, 17 by pneumonia, 15 by diseases of the nervous system, 13 by typhoid fever, 13 by diseases of the heart, 8 by diseases of the kidney, 6 by influenza, and 3 by alcoholic poisoning." In one recruiting depot the admissions for venereal affections were 292·72, and the non-efficiency 18·54 per 1,000 of strength. These were the highest rates; the lowest were 195·48 and 12·16. As to physical condition and nationality of recruits:—"Number of applicants accepted, 9,585, or 38·3 per cent. of 25,012, the total number; rejected on primary examination 58·3, and declined 3·4 per cent. Diseases of the eye were the most prolific causes of rejection, having been found to a disabling extent in 8·5 per cent. of the applicants. The average age of the men accepted for service was 25·39 years, height 67·43 inches, weight 145·35 pounds, measurement of chest at expiration 34·16, at inspiration 37·02, expansibility of chest 2·86 inches. Of every hundred of these recruits 68·3 were native Americans; white 57·6, coloured 8·6, Indian 2·1. Of the foreign born men 9·4 came from Ireland, 9·2 from Germany, 3·1 from England, 2·2

from Canada, 1·6 from Sweden, and lesser percentages from other countries. About two hundred and fifty different callings or occupations were recorded on the enlistment papers by the recruits accepted during the year."

TONGUE-TRACTION IN ASPHYXIA.

At the meeting of the *Académie de Médecine*, on the 19th December last, M. Laborde reported five fresh cases in which he had employed his method of rhythmic tractions of the tongue for recalling asphyxiated persons to life. He maintained that the procedure almost invariably succeeds where other methods fail, the bulbar centres being powerfully stimulated by excitation of the superior laryngeal nerve. M. Lancereaux expressed doubt of its efficacy in cases of sudden arrest of the heart's action. He attributes arrest of respiration in many cases to excitation of the sensitive terminations of the vagi, by allaying which—as by morphin—respiration may be restored. In the case of a child apparently dead after violent convulsions, he restored animation by an injection of morphin. In a case of laryngeal cancer the patient became asphyxiated, tracheotomy failed to give relief, and morphin was successfully employed. M. Picard had tried M. Laborde's method in three cases and failed in all.

MR. HART IN AMERICA.

We gather from the November number of the New York *Post Graduate* that Mr. Ernest Hart's well-meant efforts to remodel medical matters in the United States according to his own (English) opinions on the fitness of things, have not been received with becoming meekness. Dr. Hammond has been out on the warpath, and has used his tomahawk freely and with effect. The *Post Graduate* suggests that "missionaries ought to thoroughly understand the subjects they are discussing."

THE DIETETIC TREATMENT OF DISEASE.

Mr. W. Langford Symes, L.R.C.P.I., L.R.C.S.I., of Kiltegan, County Wicklow, has designed a series of very neat diet-cards, for use in the consulting room. They are put up in packets which can be carried in the coat pocket. These diet cards are printed and published by H. Silverlock, 92 Blackfriars' Road, London, S.E. Each packet contains four sets of diets, distinguished by being printed on toned paper of different tints. No. 1 diet is suitable for acute inflammatory diseases and fevers; No. 2 for use in convalescence, marasmus, malnutrition, and the wasting of phthisis; No. 3 for gout, lithiasis, affections of the kidneys, or for mild cases of Bright's disease; No. 4 for diabetes. From all the diet-lists stimulants are especially omitted. In the compilation of these cards considerable latitude has been allowed, and it is left to the attendant physician to cancel unsuitable articles in a given case. The author wisely remarks that many chronic albuminurics require, and are

in no way injured by, a relaxation of the severe pure milk dietary, while the incipient diabetic may take with impunity many articles included in the "Index Expurgatorius" on Card IV. We have only to add that in compiling these very useful diet-cards, Mr. Symes has conformed to the most rigorous rules of medical etiquette. His name does not appear on the cards themselves, only on the outside of the packet containing them, and then merely as "W. L. Symes." The price of each packet of 25 cards is half-a-crown.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Therapeutic Novelties.

Messrs. Burroughs, Wellcome & Co., of Snow Hill Buildings, London, E.C., have brought under our notice a series of new preparations, which seem fully to sustain the high reputation of that firm. We shall briefly describe the novelties in question.

Physicians will find two convenient and useful additions to their *armentarium* for the treatment of fever, and especially of typhoid fever, in the "tabloids" of compressed bismuth salicylate and of compressed eucalyptol phosphate respectively. Each tabloid of bismuth salicylate contains 5 grains of the salt, and the dose is one to four tabloids taken with water or other liquid as directed by the physician. The eucalyptol phosphate tabloids contain one grain of phosphate of eucalyptol in each, which when dissolved in the mouth or stomach will yield nearly one minim of pure eucalyptol and about two-fifths of a grain of phosphoric acid. These tabloids act as efficient thirst-assuagers as well as mouth disinfectants.

The Kepler cod-liver oil with malt extract has of course been long and favourably known as a pleasant and easily-digested food for infants and invalids. The firm have now added to each fluid ounce 4 minims of eucalyptol. This improves the taste and increases the therapeutic value of the preparation.

There are in the collection submitted to us three sets of tabloids of compressed Blaud's "ferruginous" pill, prepared according to the French Codex—first, the plain preparation, each tabloid containing 4 grains and being sugar-coated; next, tabloids of 4 grains of Blaud's pill with one-twentieth of a grain of aloin; and lastly, tabloids containing 4 grains of Blaud's pill with one sixty-fourth of a grain of arsenious acid.

Samples of tabloids of compressed "didymin" or "orchitic substance," and of compressed phosphates of iron, quinine, and strychnine have also been submitted to us. Each didymin tabloid is equivalent to five grains of fresh material, while each phosphatic tabloid is equal to one fluid drachm of Easton's syrup.

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"Invaluable in Cholera Infantum."

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LACTOPHENIN has had *excellent results* in *Megrim, nervous Headache, rheumatic trouble, Influenza, Neuralgia* (see *Dr. Landowski's* paper in "Comptes Rendus Hebdomedaires des séances de la Société de Biologie." No. 4. 1894).

LACTOPHENIN has been found *very efficient* in *Erysipelas, Fever, Erysipelas with violent Delirium, Croupoury Phenmonia, Phthsisflorida* (see *Dr. A. Jaqust's* paper "On the effect of *Lactophenin*," in the "Correspondenzblatt fuer Schweizer Aerzte." Basel).

LACTOPHENIN has been *remarkably successful* in *Articular Rheumatism* (see Frau Dr. v. Roth's paper, "Ueber die Wirksamkeit des *Lactophenins*," in the "Weiner Klinische Wochenschrift." No. 37. 1894.)

LACTOPHENIN *has been favorably reported upon by many other Physicians.*

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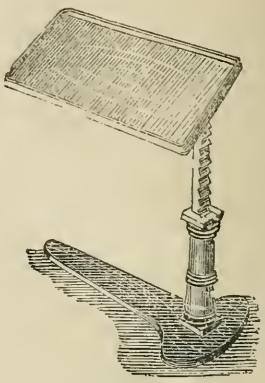

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This can also be used, as shown above, as a Reading or Writing Desk.

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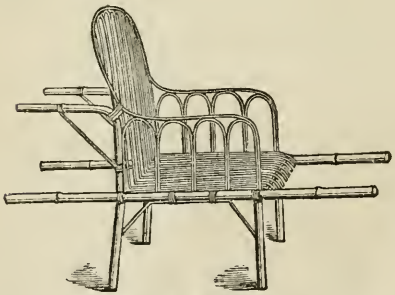

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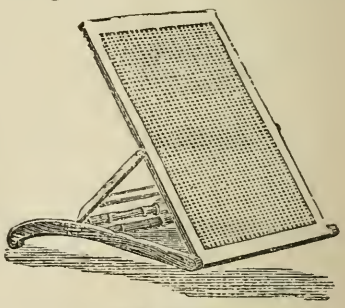

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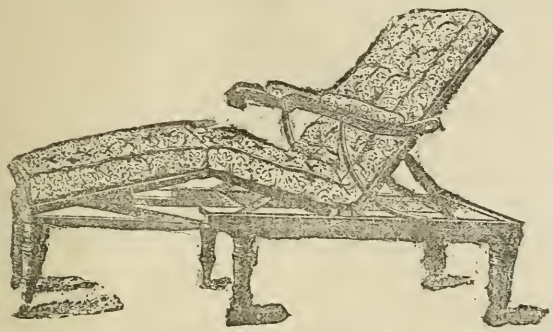

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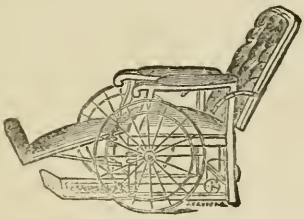

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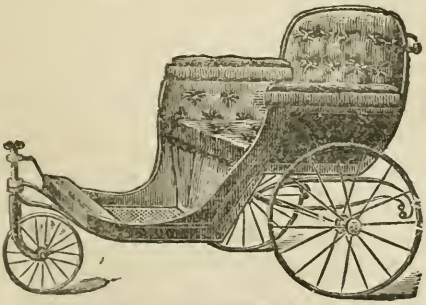

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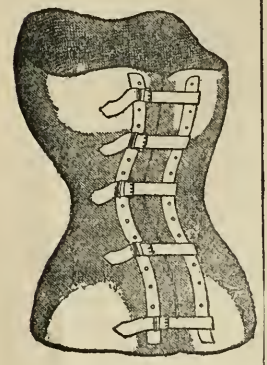


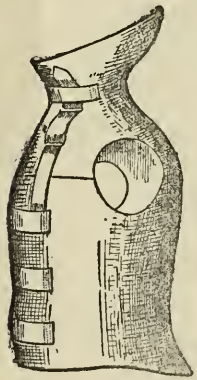
Instructions for Measurement, &c.

JACKET (*in cases of slight deformity*).

Circumference at axilla.
„ waist.
„ hips.
Length from axilla to great trochanter.

In severe angular cases circumference over apex of curve, position of same, and contour should be given; in lateral cases a description of the case.

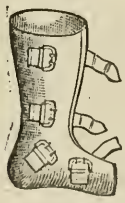
In all cases it should be stated if for male or female.



CERVICAL JACKET.

Same measurements required, and circumference at neck, and length from neck to axilla.

Any part of the Jacket can in the process of Manufacture be left Soft.



CLUB FOOT.

Circumference below knee.
„ ankle.
„ heel and instep.
Length from below knee to ground.
„ of foot.

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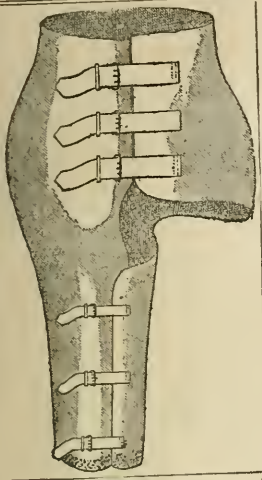
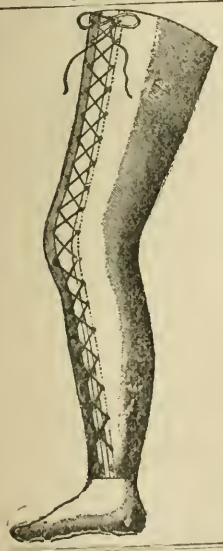


Instructions for Measurement, &c.

HIP SPLINT.

Circumference at waist.
" hips.
" thigh, top of
" above knee.
Length from waist to groin.

State if for right or left side.



LEG SPLINT.

Circumference at top of thigh.
" above knee.
" at knee.
" below knee.
" calf.
" ankle.
Length from groin to centre of knee.
" centre of knee to ankle.

State if for right or left leg.

When the foot-part is required, also circumference of heel and instep, and length from centre of knee to ground.

If the limb is contracted the contour should be given.

Splints are also made in Poroplastic for fracture of Inferior Maxilla, Humerus Elbow-Joint, Forearm, Thigh, Knee-Joint, Leg, Shoulder-Joint, Hand, &c.

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